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ABSTRACT

This report describes two special studies that were funded separately as components of the National Educational Finance Project: (1) Early Childhood Education and (2) Basic Elementary and Secondary Education. For conceptual and operational reasons the two studies were merged into a single study which identifies the needs of individuals in American society and public school systems to meet those needs. A cost analysis of operating expenses of a sample of school districts (urban, suburban, independent and Bureau of Indian Affairs) for the regular scholastic year 1968-1969 and the summer of 1969 is presented. Also included is a projection of needs of 1980 in terms of capital outlay necessary to operate effective educational programs. Twenty-three tables and four appendixes supplement the text. School population estimates for 1970 and 1980 are also given. (WY)

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Early Childhood and Basic Elementary and Secondary Education

NEEDS, PROGRAMS, DEMANDS, COSTS

William P. McLure, *Director*
Audra May Pence, *Associate Director*

National Educational Finance Project · Special Study No. 1
Bureau of Educational Research, College of Education
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FOREWORD

This report describes two special studies that were funded separately as components of the National Educational Finance Project: (1) Early Childhood Education and (2) Basic Elementary and Secondary Education. They were merged into a single study for conceptual and operational reasons.

The division between early childhood education and elementary school is arbitrary, dictated in this study by custom. The former includes children below first grade or six years of age. The latter begins with first grade and extends through sixth grade or age eleven. Secondary education includes seventh through twelfth grades. These divisions represent only approximate points of transition from one developmental stage to another. They do not suggest discreet and absolute points of separation.

Perhaps the grayest area of division is between the elementary and the secondary levels. The junior high school and the middle school have become an intermediary or transitional structure between the elementary school and the high school. These terms are used synonomously in this study. There is no general agreement in definition by grade or age level. Middle schools include the following combinations of grades: five, six, seven, and eight; six, seven, and eight; and seven, eight, and nine. The predominant practice is the combination of grades seven, eight, and nine. This grouping is chosen in this study for convenience in assembling data.

The study has focused on the following:

1. The needs of individuals and of society
2. The nature of educational programs to meet the needs of individuals
3. Criteria for identifying pupils according to variable needs
4. Estimates of relative numbers of pupils in respective programs
5. Methods for distinction between special and basic educational programs

The study is designed to identify the needs of individuals in American society and of public school systems to meet those needs. The methods of study have included review of the literature; observations of a sample of public schools and special educational agencies, including conferences with officials and pupils; and consultation with specialists in education.

Another task of the study is a cost analysis of the following categories of educational programs:

1. Prekindergarten programs
2. Kindergartens
3. Special programs for mentally and physically handicapped pupils
4. Special programs for pupils with social and emotional difficulties
5. Special programs for remedial and compensatory treatment for learning difficulties
6. Special programs for vocational education
7. Basic educational programs — the residuals after subtracting the costs of special programs from the total operating expenditures.

All costs in this study are limited to the current operating expenses of the participating school districts for the regular scholastic year 1968–69 and the summer of 1969. It has been impossible within the scope of this study to obtain estimates of capital facilities that could be computed on an annual basis and treated as a component of the total annual cost in each district. Data are available on a few new school buildings and other capital facilities that appear to be forerunners in American education.

There is no estimate of the private input to the cost of education. For example, the expenses that parents contribute through purchase of books and other materials incident to education, private transportation, and other items are not estimated. Thus, the costs presented here are the conventional portions that appear as expenditures from revenues available to local boards of education.

The cooperating public school districts and other educational agencies in this study are selected from a larger list of agencies that have been identified by knowledgeable persons as offering some outstanding programs. The cities and suburbs are believed to be fairly representative of the central and outer metropolitan areas. Those classified as independents may not be so representative of all nonmetropolitan areas. However, projections based on practices in these sample districts will be adequate to indicate the general magnitude of needs for the next decade.

William P. McLure

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1 / INTRODUCTION

This study has drawn upon a broad range of human experience in public education. It has included an exhaustive review of the literature of the past quarter of a century. Many contemporary researchers and program developers have contributed information through personal interviews, conferences, and recent writings, some of which were in prepublication form.

Thirty-one public school districts were invited to participate upon recommendation of consultants who were acquainted with some unique programs underway in these systems. These included twelve great cities, nine large suburban districts adjacent to great cities, and ten districts removed from large metropolitan areas, including three districts with large components of Indian population. There were schools in seven agencies of the Bureau of Indian Affairs. Six centers of the National Laboratory on Early Childhood Education were included. In addition several programs for Head Start, Follow Through, Child Day Care Centers, and other special programs were included.

Twenty-eight public school districts submitted statistical data on distributions of pupils, staff, and expenditures as requested for cost analyses of programs. Members of the staff visited selected schools in each of the cooperating districts and other agencies. Field observers collected data on educational programs, facilities, and on the views of staff members and students concerning educational needs.

Finally, officials of each school district submitted written responses to the following questions on educational purposes and needs:

I. What major changes in the nature and scope of educational objectives are needed in your school system during the next ten years?

II. What major developments in educational programs and services should be accomplished by 1980?
  A. In early childhood education (below first grade)?
  B. In elementary education?
  C. In secondary education?
  D. In extended school year (summer school)?
  E. In part-time programs for adults and school dropouts?
  F. Others?

III. What educational needs of your community do you believe should be either assumed or expanded by other agencies during the next ten years? What programs should be operated cooperatively between the public school system and other agencies? Identify agencies in both cases.

IV. Comment on needs, issues, and problems of pressing nature.

These school districts and other agencies were not selected as a completely representative sample of all systems in the United States. They were picked from a larger group with some random choices to obtain as much geographical distribution as possible among large cities, suburbs adjacent to cities, and nonmetropolitan areas. The primary criterion was that the district have some unique programs designed to meet special educational needs.

This study was designed to identify the crucial educational needs of individuals — and of our society — for the decade of the 1970s, to translate those needs into requirements of educational programs, and to estimate the dimensions of costs for programs to serve particular population groups.

The study was planned to make general projections that may serve as guides to development of educational policies. The study was not designed to evaluate the performance of schools since there are no readily available measures by which to judge the fulfillment of needs. On the other hand the educational community does possess knowledge bearing on performance, with credibility that cannot be ignored. The description of the nature of this knowledge is within the scope of this study.

DIMENSIONS OF NEED

The concept of human need is the most basic one in education. The knowledge that comes from this concept provides the basis of objectives, decisions, and actions. This is true for individuals as well as for school systems, and also for governments that exercise responsibility for education.

When one speaks of the needs of a society, he is either defining or implying aggregate needs of individuals. When he goes further and talks of purposes, objectives, and goals to meet needs he is still dealing in terms of aggregates. When he translates purposes or objectives into operational terms he begins counting and classifying individuals, defining programs, estimating resources or inputs, and describing processes of performance to meet the objectives.

Needs of the Individual

Someone once said, "Man must live until he dies." This thought implies more than it explains; its meaning requires a context. For example, *living* implies purpose and an environment to give purpose a meaning. Thus, the concept of living, or life of the individual, becomes defined largely in societal or environmental terms. Every culture has its system of beliefs, attitudes, and expectations about the role of the individual — his degree of autonomy and shared responsibility.

Neither a philosophical nor an empirical treatment of needs of individuals in America is possible at this time. Perhaps a listing of commonly accepted needs is in order to establish an explicit base from which the educational needs can be described in this study.

The dimensions of basic needs of the individual in our society are as follows:

I. Personal Development
    A. Health — physical development, emotional well being
    B. Intellectual performance — basic cognitive skills: reading, verbal and written communication, acquisition of knowledge, and reasoning (These depend upon linguistic and numerical skills and a common language for expression of ideas, feelings, and interaction with others.)
    C. Ethics, values, and character
    D. Affective qualities: creativity, motivation, initiative, self-control, purpose, effort, self-direction, and personal security

    E. Talents and avocational interests
    F. Qualities of adaptability
- II. Vocational Development
    - A. Occupational skills
    - B. Technological ability
    - C. Entrepreneurial skill
- III. Social Development
    - A. Interpersonal sensitivity and skill in relating to others
    - B. Responsibility as a homemaker
    - C. Responsibility as a citizen in community, state, and national affairs

This list could be extended and elaborated in great detail by tracing the nature of these ideas as they apply to an individual from birth through adulthood. They are complex ideas. Needs are dynamic and changeable, never quite fulfilled. They are determined in part by the individual, by social expectations, and by natural endowment. These categories suggest that the individual is a complex being with a set of closely related characteristics. For example, the intellectual development of a child cannot be fully comprehended without consideration of other interdependent components of his total personality.

Needs of School Systems

The needs of public school systems are far more than money. They include a profession of skilled and dedicated staff members nurtured by the support of a responsive and appreciative society. They need the challenge of constructive criticism. They need an environment that is most conducive to learning and to the most effective use of the professional skill of its staff. This environment must have adequate buildings, grounds, equipment, and other material goods. The social or human organization is the most important part. It constitutes a "community" in its own right with its doors open to the larger society in which it exists. The school system must be kept up to date in order to utilize the products of science, technology, and human thought.

Adequate financial support is necessary to provide the material and human resources for a viable and effective school system. But the test of fiscal adequacy depends upon the requirements to maintain an educational environment that is necessary to achieve the educational objectives of society. These objectives determine programs, resources, processes, human qualities, and financial requirements.

The first task in this study is to examine the nature of contemporary educational objectives. The consensus that we find will be used as a criterion for identifying the crucial human and material needs of the public school systems during the decade of the 1970s.

In every society educational objectives appear in two forms: the idealistic and the operational. In America there seems to be general agreement on the fundamental goal of equal opportunity for the development of every individual to the fullest of his capacity and his motivation to help himself. Since the public schools are the only institutions the government has charged with specific educational responsibility for most individuals, these institutions naturally have adopted this general goal as an ideal for their guidance and effort. Or put another way, this broad objective has been unfolding as a social purpose, as evidenced by the expanding scope of expectations placed upon the public school systems during this century.

In operational terms the educational objectives of school systems are commonly described as activities and tasks, or programs and functions, such as the following examples:

1. To provide a half-day kindergarten for all children of age five
2. To provide guidance and counseling services to pupils in all grades
3. To operate a junior high school (or middle school) for grades six, seven, and eight
4. To increase the breadth of the high school curriculum by expanding the programs in vocational education to include all of the major occupational fields

These categories are stated in typical form. They provide the framework for defining the specific objectives, identifying the groups to be served, and prescribing the necessary programs and resources to accomplish the stated purposes. Ordinarily, school systems follow a rational process of defining objectives as illustrated, estimating resources and financial requirements, and considering alternatives. There are instances where group pressures may abort this process. In most cases the objectives are not stated in a form which permits the best possible collection of information on inputs and educational results, or to evaluate the extent to which the objectives are achieved.

There is much discussion today about the necessity of formulating educational objectives in terms of performance, or, using a phrase that has been coined by some enthusiasts of the idea, "behavioral objectives." The proposal for this form of educational objectives is supported by a cacophony of government leaders, students of school finance, and critics of public schools. Some advocates view objectives in these terms as amenable to the establishment of state and federal centralized accounting and control systems. Others emphasize the value of performance objectives as basic to improvement of methods for evaluating educational outcomes, leading to greater efficiency and educational quality. Others perceive these objectives as bases for holding the school system accountable for its responsibilities. Some claim that performance objectives might provide new and more efficient methods in allocating state and federal funds to school systems. Still others claim that performance objectives, accompanied with program accounting and valid methods of measuring educational outcomes, would be of greatest value to local school systems in making choices among alternatives as an indigenous part of the educational process.

Despite the differences in claims there is a strong rational argument for defining educational objectives in terms of performance insofar as reasonably valid measures of evaluation can be developed to accompany them. Also, a bit of reflection on the meaning of education as an intimate part of the growth and development of human beings suggests that much of what is important can be defined only in very general terms.

The first task in this study is to identify the dominant contemporary thought on educational objectives of the future. This task has included a gleaning of thought from the literature and a sampling of judgment of educational leaders and scholars.

Objectives for the Decade of the 1970s

The cooperating school systems prepared a formal response to the question: What major changes in the nature and scope of educational objectives are needed in your school system during the next ten years? The question was addressed to the superintendent for an answer representing the best possible consensus from the school district. Field workers of the study held conferences with the superintendents and staff members for discussion of the responses. The responses were prepared with a broad participation from staff members.

The responses from leaders in all districts cooperating in this study include the following substantive areas with a variety of objectives:

1. *Early childhood education.* They expressed the need for establishing specific programs in this field. A more detailed treatment will be given in chapter 2.
2. *Special programs for children with mental, physical, emotional, and learning difficulties.* They listed this category as one in need of expansion. In a few cases the need is for introduction of programs that do not exist.
3. *The school curriculum.* They identified specific changes in the school curriculum. These include expansion in scope, refocus of emphases, and numerous suggestions for improvements in the quality of present offerings.
4. *Instruction.* They listed proposed changes in instructional strategies, such as: modular scheduling, ungraded programs, more individualized instruction, and greater use of new instructional media.
5. *Staff utilization.* They listed changes that are needed in utilization and improvement of staff, such as: team-teaching, use of teaching assistants and other aides, and more effective in-service education programs for staff members.
6. *Facilities and materials.* They strongly emphasized needs for improvements in buildings, equipment, and materials to accommodate the instructional program as envisaged. They expressed a need for more technological equipment such as computerized programs and educational television.
7. *Supportive services.* They expressed a need for expansion of the following services: guidance and counseling, psychological service, health, food, and transportation.
8. *Extended school year.* They would like to expand and enrich the summer school to serve larger numbers of pupils.
9. *Part-time programs for dropouts and adults.* They strongly emphasized a high priority for these programs.
10. *Reorganization of the school system.* Some leaders expressed

the need for a major reorganization of the school system. The ideas included organization of early childhood programs as an integral part of elementary school; revising the grade structure between elementary, middle, and high school; and revising the instructional procedures of schools.

The school leaders mirror the dominant views expressed in the literature. They view the goals of the public school systems in the 1970s as broad commitments, extending formal education downward to younger ages, and revising and enriching present programs all across the board. They see no retreat to narrow-gauge objectives. To the contrary they perceive broader social purposes such as follows:

1. The schools must contribute to development of greater unity of cultural groups.
2. They must become a greater force for improvement in the quality of community life.
3. Schools must deal more effectively with individual differences; they must make a special effort to raise the performance of slow learners to keep pace with the rising levels of employable skills in all vocational fields and general demands for effective citizenship.
4. Research agencies and schools must cooperate to advance the knowledge about a broad evaluation of educational outcomes, including achievement, knowledge acquisition, skills, and ability to analyze problems. In addition, evaluation must include values not commonly treated by present methods.
5. School systems must undergo some internal renovations and developments in fiscal and budgetary procedures, information systems, and research services.
6. School curricula must be geared to relevant cultural groups. More emphasis should be placed on methods of analyzing problems and use of knowledge in improving the quality of living.
7. There must be more involvement of citizens from respective cultural groups in planning and implementing educational programs.
8. Educational goals must represent a balance of motivation for academic achievement, emphasis on full development of individuals, and concern for understanding social problems and values.
9. Communities should make every effort to avert undue social conflict. Those in deep conflict should strive toward achievement of

goals with comprehensive purpose and not excessive drive for only a few. For example, the present trends show excessive emphasis on preparation for white collar jobs, whereas a broad emphasis is needed for the total range of occupational activity.

10. Educational goals must be defined wherever possible in terms of behavioral objectives or performance.

The responses of the educational leaders to other questions on developments in major fields are treated in the respective sections in this report. Information obtained from field observations, literature, and consultants is used for interpretation and estimation of needs in terms of resources, finance, and other requirements.

The general objectives listed here give a preview of a broad educational panorama. It is a picture of a great dynamic force in society, expanding in scope and penetrating in depth. Its mission is the development of human beings, an investment in human capital. The scope of ideas is too great for easy comprehension. To some persons its complexity may be confusing, to others it offers a source of great challenge.

These objectives pose some very difficult questions: What does our nation face among alternative objectives of this broad range? Is the task to choose or to reject legitimate objectives categorically, or to weigh and balance emphases?

2 | EARLY CHILDHOOD EDUCATION

Early childhood education is a term commonly used to describe programs of formal schooling for children under six years of age. Another term frequently used is *preprimary programs.* In each case the designation is for programs below the first grade in elementary school. The first three grades in elementary school are generally described as the primary grades.

The field of early childhood education includes a wide range of activities concerned with the care and development of children. These activities have become organized into distinctive programs requiring special knowledge, skills, and procedures for successful operation. The current programs are as follows: (1) parent education for mothers of infants, commonly defined as ages from birth to three, and of children at older ages; (2) research and experimental programs to study development of children of all ages, infants as well as older; (3) nursery school (prekindergarten) for children of ages three and four; (4) kindergarten for five-year-olds; (5) day care programs for children of working mothers, or for others in circumstances of need; and (6) special education for children with exceptional difficulties. In addition, there are various programs for health, social service, and general information to parents on child care.

The developments in early childhood education have a long history. Early childhood education today is taking on complex structures characteristic of modern society. Their roots extend to earlier generations when a few notable scholars, educators, and humanitarians, under simpler conditions of observation, made profound contributions to the knowledge of human development.

OVERVIEW OF DEVELOPMENTS

Comenius, a theologian and educator in Czechoslovakia during the seventeenth century, was concerned with the significance of sense perception in learning and the unique needs of children at different age levels. Rousseau, Pestalozzi, Froebel, and Freud are other notable Europeans whose contributions to knowledge have extended over the past century or more. Their ideas have had an impact on the developments in early childhood education in the United States in recent decades.

Early childhood education has been developing slowly in this country. Robert Owen established one of the early nursery schools in New Harmony, Indiana, in 1826. The first kindergarten in the United States was opened in 1856 in Wisconsin for children who spoke only German. In 1860 one was opened in Boston for English-speaking children. In 1873 a kindergarten was established for the first time as part of a public school system in Saint Louis, Missouri.

After the first quarter of this century, early childhood education slowly took a new form of development under the influence of scholars like Dewey, Kilpatrick, Hall, and Thorndike in America. Their counterparts in Europe were leaders like Binet, Freud, Montessori, and Piaget.

Jean Piaget, director of the Rousseau Institute in Geneva, Switzerland, has probably had the greatest impact of any individual on early childhood education during the past two decades. His ideas have added great intellectual stimulation to recent developments in this country.

The decade of the 1960s was a period of dramatic activity in this phase of education. The expansion in interest that started early in this period, along with all aspects of education, was accelerated sharply by the Federal Education Act of 1965. Federal funds brought a proliferation of research and developmental activity. Much of the concern was focused on children with personal difficulties arising from impoverished home environments and other disadvantages.

Information is not available to indicate the distribution of children in the various programs. Day care programs range from home care of one to three children to special agencies with groups of a dozen or more. Most of these are operated by licensed private agencies. Others are operated by public agencies. Some have educational programs as an integral part of the total service. Others limit their programs to custodial service.

Nursery schools, too, vary in nature. Some are limited mainly to custodial day care service. Most are believed to concentrate primarily on organized activities with educational objectives. Universities and other agencies operate schools for research and demonstration purposes.

The kindergarten is approaching universality as a program of education. After a century of diffusion this program is serving about three out of four children.

Most of these educational programs enroll children of ages three, four, and five. Very little is being done with children under age three except basic research activity and assistance through parent education programs which will be described later. Before describing the various programs, the needs they are postulated to serve, and the target groups of children, we shall present the status of school enrollments, the early childhood population, and the projected population during the 1970s. This information will indicate the scope of present education for young children and provide a basis for defining alternative developments during 1970.

EARLY CHILDHOOD SCHOOL POPULATION AND ENROLLMENTS

This population includes ages three, four, and five. The most recent data on enrollments of children in these age groups are reported in a recent survey by the U.S. Office of Education [37] covering the fifty states and the District of Columbia. This report shows a total of 11,905,000 children of these ages in 1968, respectively as follows: three years — 3,811,000; four years — 4,000,000; and five years — 4,095,000.

Status of School Enrollments

In October 1968, 3,929,000 children are reported enrolled in preprimary school and an additional 444,000 five-year-olds enrolled in programs above kindergarten. The breakdown of school enrollments for each age group is as follows: three-year-olds, 8.3 percent; four-

Table 1. TRENDS OF EARLY CHILDHOOD POPULATION AGES THREE THROUGH FIVE AND SCHOOL ENROLLMENTS — OCTOBER 1964 TO OCTOBER 1968 (NUMBERS IN THOUSANDS)

Year	*Three-Year-Olds*		*Four-Year-Olds*		*Five-Year-Olds*	
	Population	*Enrollment*	*Population*	*Enrollment*	*Population*	*Enrollment*
1964	4,238	181	4,148	617	4,110	2,389
1965	4,149	203	4,238	683	4,162	2,521
1966	4,087	248	4,155	785	4,244	2,641*
1967	3,992	273	4,088	872	4,162	2,724*
1968	3,811	317	4,000	911	4,095	2,701*

* Excludes five-year-olds enrolled in primary school: 1966 — 505,000, 1967 — 444,000, 1968 — 444,000.

SOURCE: Roy C. Nehrt and Gordon E. Hurd, *Preprimary Enrollment of Children under Six: October 1968* (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, June 1969), OE-20079-68.

year-olds, 22.8 percent; five-year-olds, 76.8 percent. The respective figures for October 1966 were 6.1 percent, 18.9 percent, and 62.2 percent.

Since the programs of early childhood education are distinguished partly by age groups, the data are arranged accordingly to show the most recent status of enrollments. Table 1 shows the early childhood age population of ages three through five and the corresponding enrollments in preprimary programs from October 1964 to October 1968. This table shows a slight decline in each age group but an increase in number of children enrolled in school. The percentages of the age groups enrolled increased by roughly one-third for the three-year-olds, one-fifth for the four-year-olds, and one-eighth for the five-year-olds.

Table 2 shows the population of three- and four-year-olds by color, two levels of family income, and the respective school enrollments. The breakdowns for color and income level are not shown for five-year-olds. About 11 percent of this age group is enrolled in programs above the kindergarten and these characteristics of income and color are not reported for this group.

These data suggest a number of things. School attendance for the five-year-old is approaching universal acceptance. A number of states

Table 2. ENROLLMENTS OF CHILDREN UNDER SIX IN EARLY CHILDHOOD PROGRAMS AND PRIMARY SCHOOL — OCTOBER 1968 (NUMBERS IN THOUSANDS)

Age and Other Characteristics	*Population*	*Enrollment in Preprimary and Primary School*	
		Number	*Percent*
1. Total Three- to Five-year-olds	11,905	4,372*	36.8*
2. Total Three-year-olds†	3,811	317	8.3
(1) From Families Reporting Income Under $5,000			
White	657	29	4.4
Nonwhite	348	37	10.6
(2) From Families Reporting Income $5,000 and Over			
White	2,320	214	9.2
Nonwhite	246	23	9.4
3. Total Four-year-olds†	4,000	911	22.8
(1) From Families Reporting Income Under $5,000			
White	622	85	13.7
Nonwhite	377	95	25.2
(2) From Families Reporting Income $5,000 and Over			
White	2,516	581	23.1
Nonwhite	238	85	37.0
4. Total Five-year-olds	4,095	3,145*	76.8*

* Including 444,000 five-year-olds in primary school.

† These totals are greater than the totals of children from families reporting income.

SOURCE: Adaptations from Nehrt, Roy C., and Hurd, Gordon E., *Preprimary Enrollment of Children under Six: October 1968* (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, June 1969), OE-20079-68.

have taken action to introduce kindergarten programs or to expand existing ones since the data in table 1 were published. Hence by October 1970 the enrollments may be above 80 percent of the five-year-olds. Thus, the focus on education of the five-year-olds in the 1970s will be on getting the remaining one-fifth into school and on certain changes in the program for the total group.

Table 3. ENROLLMENTS IN EARLY CHILDHOOD PROGRAMS BY TYPE OF INSTITUTION — OCTOBER 1968 (ENROLLMENTS IN THOUSANDS)

Age	*Total Enrollment*	*Percent of Total Enrollment*	
		Public	*Nonpublic*
1. Total Three- to Five-year-olds	1,228	46%	54%
White	979	40	60
Nonwhite	249	70	30
2. Total Three-year-olds	317	29	71
White	256	23	77
Nonwhite	61	56	44
3. Total Four-year-olds	911	52	48
White	723	46	54
Nonwhite	188	75	25
4. Total Five-year-olds*	2,701	84	16
White	2,333	83	17
Nonwhite	368	91	9

*Excluding 444,000 five-year-olds in primary school.

SOURCE: Roy C. Nehrt and Gordon E. Hurd, *Preprimary Enrollment of Children under Six: October 1968* (Washington, D.C.: U.S. Department of Health, Education, and Welfare, Office of Education, June 1969), OE-20079-68, p. 9.

The data on three- and four-year-olds suggest a greater acceptance of schooling for the four-year-olds than for the three-year-olds. There is a higher percent of nonwhites than whites of each age group enrolled in school. There is a higher percent of nonwhites and whites from families reporting income above five thousand dollars than from families with income under five thousand dollars.

These percentages of three- and four-year-old enrollments do not reveal the large impact of federally supported programs for children from low income families. The larger percentages from families with income over five thousand dollars suggest a demand for education which may be broader than the purposes for which the federally supported programs are designed.

Table 3 shows a distribution of enrollments between public and nonpublic schools. Most of the five-year-olds are in public schools. Twenty-nine percent of the three-year-olds in school are reported in public schools in contrast to 52 percent of the four-year-olds. Data are not available to show the impact of the Elementary and Secondary Education Act of 1965. Miller [33] estimates that about 400,000 of the 682,000 increase in early childhood enrollment of children under six from 1964 to 1967 can be attributed to Head Start and other programs supported by federal funds. The growth from October 1967 to October 1968 is only 60,000.

In 1968 the National Education Association [36] reports that only thirty states provide some state aid for kindergarten. Twenty-three make no provision for a state legal entrance age. The extent to which this program is provided among school districts in the states without state aid is not known. It is not universal in all districts in the thirty states that provide state aid. A number of states are considering the addition of kindergarten to the public school system.

In this first year of the 1970 decade the status of early childhood school enrollments may be close to 10.0 percent of three-year-olds, 25 percent of four-year-olds, and 80 percent of five-year-olds (including those above kindergarten level).

Projected Early Childhood School Enrollments

It is a reasonable probability that most five-year-olds will be in school by 1980. Enrollments below five years are likely to increase for special programs and groups. Many of these in recent years have been in experimental schools and in special programs, with priority accorded to particular groups such as children from disadvantaged home environments.

Those researchers and educators with most dependable knowledge about the development of children advocate expansion of early childhood education from the laboratory stage to wide dissemination for the three- and four-year-olds during the 1970s and for expansion of research and experimental programs for children under three years of age. Most scholars are very cautious about establishing formal schooling for children under three years of age until much more knowledge is obtained about their development.

To visualize the magnitude of programs for three- and four-year-olds it may be helpful to examine the estimates of age groups by the U.S. Bureau of the Census. The total estimates for the United States are shown in table 4 for 1970 and 1980. All age groups of five and below are expected to increase from 1970 to 1980.

Table 4. ESTIMATES OF EARLY CHILDHOOD POPULATION BY AGE GROUPS* (IN MILLIONS)

Age Group	*1970*		*1980*	
	Series I-D Low	*Series I-B High*	*Series I-D Low*	*Series I-B High*
1. Under Three Years	10.201	11.591	12.002	16.190
2. Three-year-olds	3.622	4.116	4.261	5.748
3. Four-year-olds	3.802	4.320	4.473	6.034
4. Five-year-olds	4.315	4.903	5.076	6.848
5. Total under Five Years	17.625	20.027	20.736	27.972
6. Total: Five Years and Under	21.940	24.930	25.812	34.820

* Calculations based upon formulas derived from October 1968 population figures for children at age five and under.

SOURCES: Roy C. Nehrt and Gordon E. Hurd, *Preprimary Enrollment of Children under Six: October 1968* (Washington, D.C., June 1969) OE-20079-68, p. 7.

"Revised Projections of the Population of States: 1970 to 1985," *Current Population Reports*, Series P-25, no. 375 (Washington, D.C.: U.S. Bureau of the Census, October 3, 1970), series I-B, pp. 26–33, and series I-D, pp. 42–49.

The range between the low and the high figures for 1980 provides a basis for estimating special groups within the total population. The estimates of population under five years of age are shown for each state in table 1 in appendix A. Table 2 in the appendix shows the estimates for the population of ages five to seventeen inclusive.

NEEDS FROM BIRTH TO AGE SIX

The basic needs of children for fullest possible development are the fundamental considerations for designing and operating early childhood education programs. They include physiological, intellectual, emotional, social, and behavioral characteristics. None of these can be left to chance. They require constant attention and provision for dynamic living from one stage of growth to the next.

A few comments from some of the leading contemporary social scientists on certain aspects of human development may emphasize the importance of carefully planned educational experiences for young children.

Intellectual Development

The need for language development has a high order of consideration in all studies of children. The literature abounds with techniques for improving language skills. McCandless [32] states,

> Language development during infancy has been shown to be more highly related to later tests of "intelligence" than any other measure of infant intelligence. With adult attention, the language development of infants can be accelerated: for example, the more reading infants have been exposed to, the more advanced their language development is likely to be. Love oriented techniques of child rearing, and a home atmosphere characterized by relatively high intellectual stimulation are typical of families whose children are accelerated in language regardless of the social class from which they come.

Hunt [22] states,

> The problem for the management of child development is to find out how to govern the encounters that children have with their environments to foster both an optimally rapid rate of intellectual development and a satisfying life. . . . The fact that it is reasonable to hope to find ways of raising the level of intellectual capacity in a majority of the population makes it a challenge to do the necessary research. It is one of the major challenges of our times.

Bloom [6] states,

> Both the correlational data and the absolute scale of intelligence development make it clear that intelligence is a developing function and that the stability of measured intelligence increases with age. Both types of data suggest that in terms of intelligence measured at age 17, about 50% of the development takes place between conception and age 4, about 30% between ages 4 and 8, and about 20% between ages 8 and 17. These results make it clear that a single early measure of general intelligence cannot be the basis for a long-term decision about an individual. . . . There is little doubt that intelligence development is in part a function of the environment in which the individual lives. . . . The effects of the environments, especially of the extreme environments, appear to be greatest in the early (and more rapid) periods of intelligence development and least in the later (and less rapid) periods of development.

Piaget and Inhelder [41] emphasize four related factors which help to explain intellectual development of children: organic growth, exercise and acquired experience with physical objects, social interaction, and internal motivation. They summarize the need for a challenging environment to stimulate intellectual development as follows: "It may even seem that affective, dynamic factors provide the key to all mental development and that in the last analysis it is the need to grow, to assert oneself, to love, and to be admired that constitutes the motive force of intelligence, as well as of behavior in its totality and in its increasing complexity."

Social and Emotional Development

From birth to age six, children's social experiences extend from the intimate interactions within the small family circle to neighborhood groups and to the larger community. They play an active role in all of these experiences. They also react to others and thus learn acceptable social behavior by being a member of social groups. They have a basic need for attention, acceptance, love, and recognition. A number of scientists emphasize the importance of symbolic play as a means of social interaction and adjustment to reality.

ALTERNATIVE PROGRAMS

The programs in early childhood education may be described as six basic types: (1) parent education, (2) day care centers, (3) nursery schools, (4) kindergartens, (5) special education for children with exceptional difficulties, and (6) laboratory schools for research and development.

Parent Education: Children Under Three Years

Most of the leading scholars believe that age three is early enough to introduce children to formal schooling. They believe that there is insufficient knowledge about infant development to have formal education for them outside the home. For this reason programs for the education of parents to serve as "teachers" of those young children is the safest and most promising action until much more research is done.

These programs are scattered throughout the country on an experimental basis. Experience suggests that they should be variable to meet the needs of parents. Some with little educational background will need a minimum training of two or three hours each week for several weeks. They would be taught how to work with their children on selected learning episodes involving language skills, positive reinforcements of particular behaviors, concept formation, and perceptual acuity. After an initial course of instruction there would be follow-up observations and conferences.

The parents would follow a program of spending a few minutes each day with the child following prescribed activities. The supervisor would confer at regular intervals with the parent for evaluation of progress and planning further activity. These actions would be supplemented by written materials.

The nature of these programs would vary according to the education and home backgrounds of parents, but the fundamental purpose would be the same in all instances.

Similar programs for parents of older children would be available. For those children in school the parents would be involved in programs designed to reinforce the work of the school. For children not enrolled in school the parents would have opportunity to obtain assistance in conducting prescribed activities similar to those for parents with children under three years of age.

Day Care Centers: Children Under Six Years

These centers are arrangements to care for the children of working mothers, or for other conditions of emergency nature. These facilities include about three types as described in Federal Interagency Day Care Requirements of the U. S. Department of Health, Education, and Welfare, Office of Economic Opportunity, for federal funds. The first is the *family day care home*, a neighborhood-based program for one to five young children in a home. The second one is the *group day care home* providing family-like care in a large residence for as many as ten or twelve children. Usually this type accommodates older children before and after school hours. The third one is the *day care center* with twelve or more of mixed ages, but usually not infants unless there are special provisions for them.

Day care facilities are provided by a wide variety of homes and agencies. A few public school systems have undertaken the operation of these facilities, particularly for the children enrolled in school. (It may be noted that one of the "consumer benefits" ascribed to education is the day care function served by the school for the time children are in attendance.)

Regardless of the operating agency, the day care facility has certain basic needs of children to serve. These are primarily to provide a hospitable, home-like care for physical comfort, safety, rest, and food, play and recreation, and other activities of interest and challenge to the children.

For the children who are not enrolled in nursery or kindergarten the day care center may be their "school." These children need more than custodial care to wait out the long day of the parent's absence. They need a portion of the day under guidance and tutelage of professional teachers. But missing this, the next best choice is a program under the supervision of professional consultants. Such a service to the personnel of the day care facility would be somewhat similar to the parent education program. It is the type of service that public school systems could provide to private day care centers. Thus these centers that are not organized and staffed for a combination of formal schooling and child care might undertake some educational activity with some professional assistance.

Ideally, the all-day care centers for children of three to five years should be organized to provide the combination of an educational program for part of the day and home-like care for the remainder.

Nursery Schools: Three and Four Years

At age three most children are mature enough to function well in small groups. They are becoming independent in caring for themselves — tying shoe laces, buttoning coats, washing hands, and toileting. Gross motor coordination is becoming distinctive for total body movement and balance as seen in climbing, running, and active group play. Fine motor coordination is observed in ability to use small objects such as crayons, paint brushes, and scissors.

Cognitive development also is becoming distinctive. Many children at three years of age have a vocabulary of one thousand words or more, with a high degree of comprehension. Average sentence length is about five or six words. Their speech-sound discrimination ranges from 25 percent to 75 percent accurate. They are taking on adult language patterns of articulation. Problem-solving is still largely trial and error. They are showing evidence of learning how to learn. Conceptual development is in a distinctive stage.

These characteristics suggest that children at three years of age are ready for an environment that is planned for proper stimulation and challenge, for creativity and satisfaction. The nursery school can provide that environment under guidance of skillful and professional personnel with proper space and materials.

A brief image of a nursery school would be as follows: An instructional unit would consist of fifteen to twenty children, all of one age or a mixture of three- and four-year-olds. The staff should consist of a teacher and two aides, supplemented by a mother on a rotating basis among all the parents of the children in the class. The length of the school day for the children should be from two and one-half to three hours for five days each week.

The indoor space should consist of 1,500 to 2,000 square feet for a group of fifteen to twenty children. The room should be divided into five or six activity areas: (1) reading and listening; (2) manipulative activities with large objects such as building blocks and toys; (3) manipulative activities with small objects such as puzzles, nesting cups, and peg boards; (4) science activities such as aquaria, small animal cages, rock collections, plants, and others; (5) housekeeping activities, with dolls, doll houses, and simple tools; (6) dining area for snacks and lunch; (7) art activities with paper, scissors, and paints; and (8) open space for activity of the total class.

The room should have auxiliary space for storage of heavy clothing, toilet facilities, sink facilities for washing hands, and a storage area for supplies and equipment. In addition there should be outdoor space of about 2,000 square feet of play area specially equipped and designed for children of ages three and four.

These basic characteristics of the physical environment suggest a highly flexible program that is designed for the children. Activity would consist of individual and small group work (or play) throughout the day with exception of snacks, lunch, and group singing. Much of the time would be spent in activities with three to five members. About half of the day would be spent in activities chosen freely by the children.

The total program is designed to develop speech, language articulation, problem-solving, self-image, and other cognitive qualities. In addition there is attention to social and physical development. There is opportunity for free exploration in activities suitable to the children, such as playing at cooking, listening to music and stories, and building various structures. Each child can set his own pace, staying with an activity as long as he likes. There are self-correcting activities. For example an auto-tutor will operate only if the child learns the proper manipulation. He has time to discover many things for himself.

The parent education program is a vital adjunct to the nursery school of the 1970s. Some parents may be involved in the programs for mothers of children under three years of age. While most of these programs have been developed to benefit children from limited home environments, they may be designed to meet a fundamental need in most homes. They provide a process for an effective collaboration of the home and the school in their common objectives to educate the child. Positive reinforcements of one for the other can replace lack of information, inaction, oversight, and contradictory action.

This description of an instructional unit does not suggest that nursery schools should be operated as collections of isolated and totally independent classroom groups. They should be organized to provide collaboration of staff with other nursery school units, kindergartens, and the early primary grades. The current trend of team teaching and openness in the design of space for kindergarten and elementary grades may be extended to the nursery school after adequate experimentation.

Kindergartens: Age Five

The basic image of the kindergarten is similar to the nursery school with certain exceptions. The children are more mature and thus the program is different to accommodate to them. An adequate instructional unit should consist of a teacher, a teacher intern, and an aide (or two aides), supplemented by a volunteer mother for twenty to twenty-five children. The amount of space should be from 2,000 to 2,500 square feet with five or six activity areas for language arts, science, art activities, symbolic play for building objects with blocks and construction sets, use of small tools such as scissors, hammers, screwdrivers, toy animals, and a host of others.

The school session should be from three to three and one-half hours per day with a program that has variable activity, but somewhat more formally structured than the nursery school. Instruction in the basic skills of language arts, mathematics, science, and other areas is organized in small groups for individual activity with learning materials, and skillful guidance for pupil-to-pupil interaction. The complexity of learning activity is in keeping with the maturity of the children.

Programs for involvement of parents should continue through kindergarten and into the elementary grades. Their nature may change but they serve a continuing function of fundamental need.

The teacher should have only one session per day. After children are dismissed the teacher and her assistants should have time to evaluate their work and to plan ahead. They should have time to work with parents on evaluation of pupils' progress and to plan activities.

Teacher Interns. One of the most promising developments in early childhood education, not only in the kindergarten but in all programs and in the elementary school, is the use of teacher interns. The interns are assistant teachers nearing completion of their professional study for teaching. The present internship in programs of teacher preparation amounts to a nominal observation followed by a few weeks of "practice teaching" under the supervision of a master teacher.

Experienced teachers strongly insist that a full year of internship as an assistant teacher is needed. Some experimental programs of this nature show great promise. The intern remains under the supervision of the training institution for conferences and seminars which also can include the participation of other teachers in the school. The relationship between the university and the school system would be broadened, as would their respective commitments to the preparation of teachers.

Teacher Aides. Teacher aides have become one of the most important additions to the staffs in early childhood programs. Some are employed full-time, some part-time. Others are volunteer mothers who take turns on a part-time basis for assistance. This experience brings them in close touch to round out their role as key persons in the development of their children. The employed aides may do clerical work, prepare materials, monitor many small group activities, observe and record data on pupil behavior, and assist the teacher in a variety of activities. They are helpful as assistant librarians. The teacher can be freed from managing the total group to concentrate on those instructional activities that require her skill and attention to small groups and individuals.

Noninstructional Personnel. All programs should have ample services of specialists such as nurses, psychologists, social workers, and counselors. These personnel should serve all grade levels.

Special Education for Exceptional Disabilities

Diagnostic programs should be available to every family to identify children with exceptional difficulties at the earliest possible age. Where possible these children should be included in the regular programs and given the necessary compensatory treatment. Severely handicapped individuals will need attention in special groups that are organized appropriately with respect to age levels and nature of difficulties.

Laboratory Centers

One of the most important of programs in early childhood education is the laboratory center for research and development. The natural setting for this center is in the teacher training programs in universities. The center may be a school that is operated by the institution as a laboratory for research, observation, and training of teachers and specialists. Also, the center may be operated by an organization of university researchers working through contractual relationships with schools in the community. The National Laboratory for Early Childhood Education is a system comprising seven centers of these two types.

The research function of these centers is to advance the basic knowledge of child growth. The function of development is to draw upon basic knowledge as a guide to institute instructional programs for testing before wide dissemination.

These centers themselves are not fully developed to indicate the potential of their productivity. The stimulation in recent years resulting from federal and other sources of support is dramatic. There is an obvious need to provide further support for a more comprehensive scale of operation.

These centers may be the best assurance of va[illegible] [illegible]elopment of sound educational practices. They may [illegible] against faddism and chauvinistic tendencies am[illegible] [illegible]peting groups and institutions.

SUMMARY

The major considerations in the field of early childhood education for the next decade are the following: (1) an expanding population of children under six years of age, (2) an increasing body of knowledge about the total growth and development of children, (3) an increasing knowledge about growth in early years that affects development in subsequent years, and (4) an increasing knowledge about what can be done by the home and the school to affect the development of individuals.

There has been much activity in recent years to establish new educational programs for young children based on the general proposition that intervention of formal schooling at earlier ages is needed. Many programs may not prove to be successful for numerous reasons, such as inadequate design, lack of proper organization and skilled staff, insufficient resources, and others.

On the whole, there is evidence to support the general movement. There is dependable knowledge to be found in the great variety of practices. In this study, we have attempted to find the areas of need and to define some dimensions for concerted action in the next decade.

These dimensions may be summarized as follows:

1. Present knowledge suggests certain characteristics of programs for all ages of children. For those under three the most promising practices indicate that parents can be taught to do things to improve the development of children.
2. The nursery schools should be expanded to provide educational programs for children of ages three and four. This expansion should move according to recent trends of first including children in greatest need because of limited home background, absence of parents for work, and other conditions that may retard their development. The nursery schools will require new inputs of staff, space, and materials to accomplish their objective.
3. The traditional double-session kindergarten of mass instruction will have to be revised to a single session with an increase in number of adults to the pupils. These programs, too, will require more space and materials than formerly.
4. Early childhood education programs are fundamentally an integral part of the elementary school. This fact has some important implications for the organization and operation of these programs in the years ahead.

5. Special programs should be available for young children with exceptional disabilities.
6. Research and development centers should be expanded with primary emphasis on advancement of knowledge about children and effective educational programs.

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3 / BASIC ELEMENTARY EDUCATION

OVERVIEW

Elementary education is a term which most generally includes formal schooling below the seventh grade. There are three major developmental or learning phases: (1) the early school, or preprimary, including everything below the first grade; (2) the primary — grades one, two, and three; and (3) the upper elementary — grades four, five, and six.

These are approximate and not absolute phases. In very recent years a trend of thought, and considerable practice, have emerged in favor of a middle school comprising grades six, seven, and eight. Traditionally the junior high school, including grades seven and eight or seven, eight, and nine, has been regarded as part of secondary education though fundamentally it is a middle phase of education.

If schools of the future are organized on the principle of human development rather than administrative convenience, district structure, and other considerations, the middle school with grades six, seven, and eight may become the dominant pattern for a middle echelon between elementary and secondary education. Regardless of the dominant pattern there will be some overlap by grade or whatever level may be used to identify the educational phases of pupil progress.

In this study elementary education is treated conceptually as including early childhood education and grades one through six, recognizing an overlap with the middle school. There is strong expression in the literature and among educators in this study to organize early childhood education as an integral part of elementary education rather than a separate echelon of preschool education.

This chapter is devoted to the discussion of elementary education from grades one through six. The treatment of early childhood education in the previous chapter should not lead the reader to infer that this phase of education is separate from elementary education. Early childhood education is fundamentally the first phase of elementary education, though some of the early programs tend to be separate.

Basic elementary education is a term used in this study to include everything in grades one through six except certain special programs. These are (1) special programs for children with exceptional mental and physical disabilities, (2) programs for pupils with social and emotional difficulties, and (3) programs for remedial and compensatory instruction.

These programs are treatments or interventions to meet deviate needs of pupils. In most cases they represent additional instruction, counseling, and therapy. In other cases, such as exceptional children, they may comprise the total educational program. Operationally, they have acquired some identity that has resulted from special state and federal funds that are earmarked for them. As stated in the Foreword, this study is designed to make a cost analysis of these programs and early childhood education. This analysis is shown in chapter 5.

Conceptually, special programs are integral parts of the total educational program. They cannot be viewed as less fundamental or less important than any other component that may not have a similar title, provision for financial support, and other characteristics.

SCHOOL POPULATION

The age range for grades one through six is from six years to eleven years, inclusive, with some overlap at the lower and upper limits. Since this study is concerned primarily with educational needs that will have a financial impact, it is important to examine the projected school age groups.

The United States Bureau of the Census and the U.S. Office of Education have the best available estimates of school population during the decade of the 1970s. The census projections are shown in tables 1 and 2, appendix A. The figures are not shown for ages six through eleven. The U.S. Office of Education [23] has a projection of school-age population from 1970 to 1978 showing a decline for the ages five through thirteen from 37,108,000 to 35,652,000 based on the average of Series I-D and I-B of the census estimates.

If the average projections of these series are correct the low point of the birth curve in 1968 will appear in the twelve-year-age group in 1980. There will be little decline in the age group of six to eleven years. The enrollment estimates of grades one to six are expected to be stable. Some transfer from nonpublic to public schools will offset slight declines in the age population.

Thus, as was pointed out in the preceding chapter, early childhood education faces two broad needs: one is to develop new programs, the other is to accommodate a large growth in population. In grades one to six the needs will be largely to improve the quality of educational programs. Some communities will have additional needs for growth, others will have to make adjustments for declining enrollments.

We shall next examine the types of needs which are independent of population growth.

NEEDS OF YOUTH IN ELEMENTARY SCHOOL

Every child needs an educational environment that challenges him, responds to him, and helps him to develop as fully as possible in all characteristics as listed in chapter 1. If he has had prior experience in early childhood programs, continuity of development will be very important. If he is entering school for the first time, he needs a comprehensive diagnosis to determine his cognitive performance, attitudes, pattern of behavior, and self-concept.

The first two or three years are crucial for distinctive development of ability to work independently, to work effectively with other children, and to use a variety of learning materials. His verbal and written skills develop rapidly during these years. Intellectual processes of inquiry and problem-solving become pronounced.

OBJECTIVES OF ELEMENTARY EDUCATION IN THE 1970s

All sources of information available to this study indicate a deep social commitment to education. There is a common purpose to help every individual develop as fully as possible intellectually, physically, emotionally, and socially, in accepted behavioral terms.

This is a broad purpose with which few critics disagree. Those who do, single out one or more specific characteristics such as reading skill, writing skill, verbal communication, problem-solving ability, and behavioral traits to evaluate the performance of pupils as well as the school system.

The striking thing about expressions of educational objectives in this study is their verification of a complex purpose. Our society is too complex to be served by a simple educational objective at any level of operation.

The forms of knowledge about achieving this complex goal of education are put in terms of environmental factors. Educators in the sample of school districts of this study, writers, and consultants express concrete objectives in terms of environmental factors in the school, the home, and the community to be established or to be improved as conditions for progress toward achievement of the broad goal.

The educational objectives of the elementary schools stated by these leaders may be classified as follows: (1) organization of the school, (2) the educational program, (3) instructional procedures, (4) the staff, (5) supportive services, (6) facilities, and (7) school and community relations. An examination of these objectives indicates that some may be accomplished without additional resources. Others are contingent on additional financial support.

These objectives create an image of a new elementary school which has been in the making slowly during the decade of the 1960s.

ORGANIZATION

There are two dimensions of change in organization that are mentioned as crucial during the years ahead. One of these is the macrostructure. In some parts of the country there are districts with a population that is too small to organize schools for the operation of a broad curriculum with all the essential services. In many districts the reorganization of some schools is an objective which leaders describe as a prior condition to accomplish fundamental improvements in the quality of education.

These objectives reflect the needs for renewing the basic organization of districts and schools within districts. The changes involve grade combinations for schools, relocation of school centers in order to serve the pupils, identify with the community, and provide an adequate environment for the next dimension, the internal organization of the school. Only three districts listed the extended school year as an objective. Most districts favor a longer school year, but there are too many other needs with higher priority to give this one serious consideration.

The other dimension is the microstructure or the internal organization of the educational program, the instructional process, the deployment of staff, and the use of supportive services. The general trend of practice in elementary education has three outstanding purposes: (1) to make early childhood programs an integral part of the elementary school for continuity in the program, (2) to develop more collaboration among staff members, and (3) to offer flexibility for pupils to move from one level to the next when they have achieved the learning tasks identified for each level, independent of other pupils' progress.

There is a trend toward reorganizing the first three grades into a nongraded system of developmental phases to allow greater flexibility of individual progress. A few persons advocate a nongraded structure for all of the elementary school.

Alexander [4] sums up the mixed attitudes toward organization by grades or other levels as follows:

> Graded schools are usually defined as schools in which the pupils are classified according to their progress in scholarship as compared with a course of study divided into grades, pupils of the same or a similar degree of proficiency being placed in the same class. An ungraded school, on the other hand, is one in which the pupils are taught individually, each one being advanced as far, and as fast, as circumstances permit, without regard to the progress of other pupils.

He observes further "no particular arrangement of rungs and levels has so far become universal, and one wonders if one will or should. . . ."

THE EDUCATIONAL PROGRAM

The educational program includes the total learning experiences of every child. In every district of this study the staff members listed specific areas of the curriculum to be expanded or to be revised in this decade. The most frequently mentioned are the arts, physical education, reading, language arts, general intellectual development, social studies, science, and mathematics.

All districts emphasize the need for expansion of all forms of the arts in elementary school. These include music, painting, drama, creative writing, sculpture, ceramics, and graphic arts. The arts are important vehicles for developing positive self-concepts and self-direction.

Music is most often emphasized as an area of need for improvement. Few schools have programs of breadth and continuity throughout all grades. Instruction in instrumental music for larger numbers of pupils should begin about the fourth grade. Singing, listening, and study of musical forms should be organized for a continuous program from early childhood through all grades.

There is divided opinion about offering foreign languages in the elementary school. The proponents argue that children should be introduced to a second language during their most impressionable years. The opponents claim that the middle school is a better time to introduce another language when students are more mature in their native language. Observers found relatively few pupils in the upper elementary grades studying a foreign language. In instances where children come from bilingual homes, instruction in the second language is found to be helpful in developing their linguistic skills.

Observations in the secondary schools of this study suggest that fewer than half of the pupils have as much as two years of formal instruction in music by a trained teacher before leaving high school. This lack of education can be attributed largely to the limited programs in elementary schools.

Physical education is another area in need of improvement in many elementary schools. These schools need programs based on the physical and emotional development of children of all ages and taught by teachers with special training for young children. Teachers express great concern that the potential value of comprehensive programs taught by skilled instructors with adequate facilities may not be understood by most citizens.

Similar needs for revisions and expansions can be found in every area of the educational program. In many schools science may be most neglected. Few schools have been designed to provide a suitable science laboratory, with living and nonliving things to be studied by young children. Learning by reading is not enough. Young children need to explore, to touch and to hold objects, and to use materials in their learning just as older pupils.

Practical arts are appearing as an essential part of modern programs in elementary schools. Even in kindergarten children learn to use simple tools and to construct objects. As they mature the skills and cognitive development increase in complexity.

A brief mention of these few examples does not suggest that these are the needs of highest priority in all schools. They are examples to emphasize that the educational curriculum of the past has been conceived as a few essential fields of learning with the remainder treated as fringe benefits. The dominant thought found in the schools in this study and in the literature is that too many young children are missing some vital educational experiences that cannot be deferred to a later time in their lives. The fundamental problem that many schools face in revising their programs is not adding courses and services and extending the school day. These measures may only overload a program that needs comprehensive revision to obtain breadth as well as balance.

INSTRUCTIONAL PROCEDURES

Every district gave a high priority to greater emphasis on individualized instruction, greater use of programmed instructional materials and other instructional media, increased sophistication of diagnosis of individual needs and prescription of learning activities, less regimentation of pupils, and more team or group teaching.

The principles of individualized instruction and continuous progress are the bases for expanding the diversity of programs and changing the instructional process from self-contained classes to flexible activities. Cooperative teaching, when accompanied by assistants, or aides, greatly increases the variety of groupings. Most of each teacher's time can be spent in small groups, thus bringing the teacher in closer touch with each individual. With proper planning, much large-group activity can be supervised by teacher aides.

The flexible instructional process has a number of advantages. Individuals have greater freedom to work at their own pace. There is less isolation of pupils in some special programs. For example, "remedial" instruction loses its character as an appendage and becomes an integral part of an extended or intensive instructional activity designed to accommodate every individual.

THE STAFF: TEACHERS

The general objective of greater breadth of programs and flexibility of the entire instructional-learning process places certain demands on teachers. They will have to accept the idea of more collaborative teaching, greater differentiation in the roles of staff members, and greater use of teacher aides. A larger number of instructional specialists in science, the arts, physical education, mathematics, and other fields will be needed than in the traditional school.

Many schools have gone far in the differentiation of roles among teachers and other staff members. There is evidence that these changes are resulting in higher quality of performance and educational results. Teachers are relieved of much nonproductive activity and thus have more time to devote to instruction. They do not suffer loss of individuality. Expertise is recognized and rewarded. On the other hand those with limited talent may feel greater insecurity.

Teachers in elementary schools are confronted with new responsibilities. They must become more expert in diagnosis and evaluation of pupil needs. They must expand their knowledge of learning resources, instructional media, and human resources available to them. The demands for accountability of performance are increasing.

The staffs of the new elementary school will change more in the nature of their roles than in the numerical ratios to pupils, according to the views of most educators in this study. The present staffing ratios in the sample of districts in this study are shown in table 5. The average gross number of pupils per teacher is 25.9 in the cities, 23.6 in the suburbs, and 23.0 in the independent (nonmetropolitan) districts. After deducting the numbers of pupils and teachers in the special programs the average ratios for the basic programs are 26.9 in the cities, 24.2 in the suburbs, and 22.3 in the independents.

The leaders in the cities claim that they need ratios around twenty

Table 5. AVERAGE STAFFING RATIOS IN ELEMENTARY SCHOOLS, GRADES ONE THROUGH SIX — 1968–69

Ratios (1)	*Cities* *12 Districts* (2)	*Suburbs* *8 Districts* (3)	*Independents* *8 Districts* (4)
1. Average Number of Pupils per Teacher in All Programs	25.9	23.6	23.0
2. Average Number of Pupils per Teacher in Basic Programs	26.9	24.2	22.3
3. Average Number of Pupils per Academic Staff Member (All Academic Staff)	23.2	20.3	20.5
4. Average Number of Teachers per Nonteaching Academic Staff Member	9.0	7.7	8.4

pupils per teacher. Those in other types of districts place other priorities above reduction in the pupil-teacher ratios.

THE STAFF: SUPPORTIVE SERVICES

Another component of the educational staff is the nonteaching professional group for supportive services. These include administrators, counselors, librarians, psychologists, social workers, and specialists for research and evaluation. The average number of elementary school teachers served for each nonteaching professional (academic) staff member is shown in table 5. In the cities there is one for each 9.0 teachers. The ratios are 7.7 in the suburbs and 8.4 in the independents.

Comparable ratios of teachers to these nonteaching academic staff members for all grades including kindergarten through twelfth are shown in table 6. These are slightly lower than the ratios in the elementary schools. The differences indicate that the secondary schools have relatively more nonteaching academic staff than the elementary schools.

Teachers at both of these levels assert a need for additional staff in the supportive services. Additional administrative assistance is mentioned frequently to free the principal for more time as leader in his unique role. He performs general guidance for total school

Table 6. AVERAGE RATIOS OF TEACHERS TO NONTEACHING PROFESSIONAL STAFF* AND TEACHER AIDES, GRADES KINDERGARDEN THROUGH TWELVE — 1968–69

	Cities	*Suburbs*	*Independents*		
(1)	*12 Districts* (2)	*8 Districts* (3)	*All 8 Districts* (4)	*Indians 3 Districts* (5)	*Others 5 Districts* (6)
Average Number of Teachers per FTE† of Nonteaching Professional Staff, Grades Kindergarten Through Twelve..........	7.5	6.3	7.2	7.1	7.3
Average Number of Teachers per Teacher Aide, Grades Kindergarten Through Twelve.........	40.6	22.7	41.6	31.5	51.9

* Non-teaching professional staff includes administrators, counselors, librarians, research and curriculum personnel, psychologists, and social workers.

† Full-time equivalent.

program, coordination of staff effort, and leadership for school and community relations.

Teachers are asking for more counseling service, librarians to coordinate a complex resource center, psychologists and social workers available when needed, and research services to aid the teacher in evaluating pupil progress. They emphasize the need for a cadre of specialists to work continuously with the total staff of the school on curriculum development, teaching techniques, and use of new instructional media.

Teacher Aides

Teacher aides perform a variety of services. They include preparation of instructional materials, record-keeping, monitoring lunchrooms, assisting the librarian, and assisting the teacher in the classroom.

As instructional assistants, the aides assist groups that are engaged in independent study, freeing the teacher to instruct small groups. Also, as teachers collaborate in team teaching there is greater flexibility to group pupils for instruction by specialists.

The use of teacher aides is developing slowly for a number of reasons: lack of experience, lack of change in the program to warrant them, and lack of funds. Observations in this study indicate that the schools which use the largest numbers of aides are those that have made the greatest change in the program and instructional processes. The extent of general use is shown in the average number of teachers per aide in table 6 for all grades. In the cities there are 40.6 teachers for each aide. The suburbs have nearly twice the ratio of aides to teachers. The districts with Indians have fewer than the suburbs but more than the cities. The other independents have the fewest of all in this study.

Guidance Services

These services include a wide range of activities such as maintaining a system of functional records, testing, counseling, supplying pertinent information from a variety of sources, and assisting teachers in diagnosis and evaluation of pupil progress and difficulties.

The counselor is the key person in these services. He is a constant assistant to teachers and not someone difficult to reach only infrequently as major crises arise. He must be skilled in working with young children and their parents.

Psychological Services

Most elementary schools fall short of adequate services of a team of psychiatrists, psychologists, counselors, and social workers. They depend almost entirely on public and private health agencies for psychiatric service. Large districts employ some psychologists who are available to schools on call. Some private psychiatrists are retained for consulting service.

Generally the schools employ staff for services with a regular day by day demand and defer to specialists in the community for the infrequent needs. Many schools in small communities have no access to these specialists for children with severe emotional difficulties.

Health Services

A well-equipped health department is an essential component of pupil personnel services in a modern school. A regular school nurse treats simple injuries and maintains contacts with parents to arrange for periodic health examinations and treatment as needed. These services provide an important link between the school and the home to keep in close touch with the health of every child. In some communities many children do not have periodic examinations and subsequent treatment for serious difficulties.

Attendance and Social Work

Trained social workers perform an important function in many schools as a liaison with the homes. They inquire into the causes of absenteeism and problems that affect the performance of children in school. They develop parent education programs designed to assist parents in improving conditions in the home which have a bearing on the education of the child.

Library Service

One of the critical needs in most elementary schools is a new type of library service. The function of the library is changing from a central depository of books and other printed materials to a comprehensive resource and learning center. All learning materials are managed through this center except basic materials that are essential to retain in classrooms.

A properly designed library has a wide variety of spaces equipped for individual and group work. Activities include reading, viewing films, listening to recordings, operating auto-tutors, and participation in group discussions. These activities require a staff including aides and student assistants to assist the librarian. Coordination of these activities with the instructional programs of teachers is essential.

Research Services

Research services are becoming increasingly important in elementary schools as at all levels. These services include: (1) analyzing information relating to particular programs and objectives; and (2) conducting studies to evaluate pupil progress, achievements of new programs, instructional materials, new instructional procedures, and other matters of importance to the school.

To be most effective these services must be operated on a districtwide basis. Yet, they must be grounded in the activities of every school. These services require a staff with highly technical skills. Some functions may be performed, with proper supervision, by persons with little technical skill. For example, a teacher aide may assist in the collection of some data on the activities of pupils. Thus, a highly complex research program may be conducted if the school system can provide the staff with essential research skills.

Auxiliary Services

These services include secretarial, clerical and other office personnel, food service operators, building custodians and technicians, transportation employees, and security officers to protect property and personnel.

Two of these are mentioned in this study with greatest need: secretarial and clerical aides to assist teachers, and security officers. Many schools do not provide adequate food service to all pupils. Other services have become reasonably adequate.

In-Service Education for Staff

A high priority item of need expressed in the literature and in the sample of districts in this study is in-service education for staff members. This has been a persistent need for many years. There is an urgency for development of new and imaginative programs in the immediate future.

FACILITIES

Facilities constitute one of the major determining factors in the operation of educational programs. The performance of school systems is affected by the nature, quality, and adequacy of facilities. They may be classified into three groups: (1) major capital facilities such as buildings and grounds, including basic furnishings and equipment; (2) instructional equipment; and (3) instructional materials such as books and consumable supplies.

Capital Facilities

Many school plants are so utterly obsolete that they cannot provide the physical environment for an adequate educational program. These need total replacement. Others should have major renovation.

No recent survey has been identified which gives even a general approximation of the relative magnitude of capital facilities of the public schools below a level of reasonable functionality for the educational objectives of the next decade. The U.S. Office of Education recently estimated that 519,300 [21] new classrooms were needed in 1967–68 to eliminate some of the most serious deficiencies. This was approximately one-fourth of all classrooms.

The observations in this study suggest that the total backlog of capital deficiencies to meet adequate standards for the educational programs of the 1970s is at least 50 percent of the total capital need. About one school plant out of three is in need of total replacement.

Most elementary schools are short on space that is designed for a variety of activities. There are few laboratories for arts and crafts, science, music, resource study centers, and other space for teachers who wish to undertake significant innovations. Few schools have gymnasiums that are equipped for a program of physical education. Few have libraries that meet standards for a modern resource center. Only rarely are buildings wired for open- and closed-circuit television.

Instructional Equipment

Instructional equipment includes typewriters, scientific apparatus, shop tools and simple machines, musical instruments, gymnastic apparatus, closed-circuit television, video cameras and recorders, projectors, record players, and many others. Most of this equipment has a reasonable utility varying from five to fifteen years.

A wide use of equipment was observed in this study, ranging from limited experimentation with a few items to routine usage on a large scale. Some new buildings were observed with every room wired for closed circuit and broadcast television. The schools were preparing videotapes of music performances, dramas, and other educational activities for playback and analysis.

Much equipment is used by pupils individually and in small groups. Programmed instructional units on strip film, cassettes, and other forms are becoming available for easy use by pupils. Some equipment may be severely limited, if not excluded, for lack of program demands or inappropriate space.

Instructional Materials

This group includes small item equipment, materials consumed daily, and learning materials generally described as software. Some examples are books, magazines, art supplies, science materials, tapes, and music records.

Instructional resources are expanding rapidly in variety and usefulness. Changes in programs to accommodate more individualized instruction necessitate quantities of these materials not perceived in traditional schools. Activities vary widely in the quantities of consumable materials such as art supplies and science materials as contrasted with the more durable objects like tapes, music records, and books. What appears to be significant is that the overall volume of materials in the most innovative schools of this study amounts to a minor portion of operating expenses.

IMAGE OF THE 1980 ELEMENTARY SCHOOL

The expressions of objectives and needs of school systems for the next few years form a picture of elementary education in 1980. They are realistic goals to which educators aspire. Moreover, these goals represent the views of lay citizens. The schools of this study show verifiable evidence that the stated objectives represent the views of laymen as well as the professional staff members.

Among the outstanding schools that were visited by field workers in this study ten were selected as exemplars of the 1980 image. Table 7 shows some descriptive statistics on these schools. They have from 300 to 1400 pupils with an average of 697. The average pupil-teacher ratio is 25.4, a figure which is about the same as all elementary schools in the cities. The average number of pupils per academic staff member, counting teachers and nonteachers, is about the same as for the cities as a whole. There is only one nonteaching academic staff member for 12.5 teachers. This compares with 9.0 in the cities, 7.7 in the suburbs, and 8.4 in the independents. In contrast to schools in general this group has one teacher aide for each eight teachers. The average for all elementary schools is not available, but the relative number of aides is estimated to be much smaller.

Aside from more teacher aides there are no unique advantages in

Table 7. PUPIL STAFF RATIOS IN TEN INNOVATIVE ELEMENTARY SCHOOLS — 1969–70

Item	*10 Elementary Schools*
1. Average Enrollment per School	697
2. Average Number Teachers per School	27.4
3. Average Number Nonteaching Professionals per School	2.2
4. Average Number of Pupils per Teacher	25.4
5. Average Number of Pupils per Academic Staff Member	23.5
6. Average Number of Teachers per Academic Staff Member for Nonteaching Functions*	12.5
7. Number of Teachers per Teacher Aide	8.0

* Administrators, counselors, librarians, social workers, and others.

numerical staffing in this group of exemplary schools. What then are the unique features? Their distinctions lie in the following:

1. The staff is committed to total school change rather than piecemeal revisions by a few teachers.
2. Change is based on a systematic plan of study and action by the entire staff.
3. The educational plan involves participation of citizens and approval of local educational authorities.
4. The plan has formulated objectives, phases of development, and provisions for periodic evaluation and revisions.
5. The program emphasizes breadth and richness of experience for every child.
6. Instruction requires a high degree of collaboration of staff members. There is a variety of instructional grouping with much emphasis on individualized study and pacing of work. Variable phasing and grouping are substitutes for the traditional grades.
7. Pupils with special needs have access to a greater number of staff members for assistance. Thus, special programs become more integrated and stronger than in the traditional "self-contained" classes.
8. The traditional libraries are expanded into complex learning centers, combining all learning resources.

9. The physical environment is designed to accommodate an open type program. Instructional areas are clustered for team and group teaching, special rooms for variable size groups and activities. Each of these schools has a new plant with space that is designed to fit the general concept of the new program.

10. The schools have more than the usual amount and variety of instructional equipment and supplies.

These are the most critical characteristics. The schools do not have everything. Some are more advanced in development than others. All are moving forward, evaluating and revising as they examine their progress. They have plans to add more teacher aides, some additional teachers, and nonteaching staff as soon as resources become available. They have needs for some additional facilities.

What seems to be unique about these schools is that they have the combination of apparent critical factors that are necessary to accomplish a total institutional change. Staff members exhibit a common commitment. They have a new sense of purpose and cooperative effort. There is evidence of selectivity which may be raising the level of talent somewhat. On the other hand, there is much evidence to suggest that the human and physical environmental conditions are providing a stimulation which results in increased performance of staff members. The physical environment is one of these factors, including appropriate space and facilities.

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4 | BASIC SECONDARY EDUCATION

OVERVIEW

In this study secondary education includes the middle or junior high school and the high school. There is no common basis for defining a middle or junior high school, either by grades or age of pupils or other means. There is a wide variation in practice, with the following grade combinations predominating: five, six, seven, and eight; six, seven, and eight; seven and eight; seven, eight, and nine. All have some common justification based on the predominant characteristics of pupils going through a transitional period of maturation.

Given the variation in individual growth and development there is no precise basis for dividing pupils between institutional levels. The most fundamental criteria of organizational patterns for schools are the intellectual, physical, and social characteristics of pupils. If, as Eichorn [22] suggests, a physical maturation is occurring in individuals at an earlier age than formerly, with a concomitant maturation in social interests, the combination of grades six, seven, and eight would have the edge over others. However, what may be equally, if not more, important than choosing a range for most pupils may be flexibility for a few individuals to move into and out of this period a year early where feasible to maximize personal adjustments.

While maturity of pupils is the most fundamental factor underlying the organization of schools, there are others that affect practice. Integration of different cultural groups, exigencies associated with particular buildings and facilities, economy of scale of operation, and difficulty in breaking with tradition are the most prominent ones.

The internal organization of the educational system to provide a continuity of meaningful and challenging experiences to the individual from elementary school through graduation from high school is the condition of overriding importance.

NEEDS OF YOUTH IN SECONDARY SCHOOL

The general needs listed in chapter 1 are continuous throughout life, though their special nature may change during the various stages of the individual's development. The period from twelve to nineteen years of age is unique for the physical, emotional, and social development of the individual. This is a period of heightened emotions, greater insecurity, frustrating decisions, and a time for adjustment to adult patterns of living.

EDUCATIONAL OBJECTIVES OF THE 1970s

Responses were elicited from leaders in school systems, students, and consultants on the unique objectives to which the secondary schools should address themselves. Objectives were defined as major efforts to assist youth as fully as possible in meeting their needs as they pass from various stages of development from childhood into adulthood.

Since some ideas do not apply solely to the middle school or the high school, the total range will be treated except where specific purposes apply to each level. The major objectives defined by the respondents are as follows:

More person-orientation. Most of the persons place a high priority on this objective for the entire age range. This showed up in a number of specific ideas such as more individualized instruction, revision of teaching methods to facilitate individual progress and supplementary services to assist the student with his personal problems.

Revision of the curriculum. In recent years significant changes have been made in some fields of instruction. Achievements are spotty. Strong efforts should continue until the total curriculum is improved and procedures are established for continuous improvement. A new approach to vocational training is mentioned by nearly all respondents. Modifications in content and teaching methods are needed especially to reach the "marginal achievers."

Instructional process. Teaching and learning strategies must be changed to a variety of styles. Examples are more team teaching, use of instructional machines and other technological methods for programmed learning, greater flexibility in scheduling, and more opportunity for independent study. Greater use of community resources is necessary. More time should be provided for student-teacher dialogue in small groups and on an individual basis.

Search for relevant standards. Most districts report the need for variable standards to challenge all individuals to maximum achievement consistent with their capabilities.

Environmental improvement. This objective is mentioned by respondents in most districts. The school environment includes greater differentiation in teaching talent, upgrading of staff quality and talent, better human relations between students and staff and between lay citizens and staff.

Meaningful integration of cultural groups. More emphasis is needed on procedures for development of social skills and critical thinking. More dialogue and interaction among groups are essential, supplemented by individual study with purpose and direction.

Involvement of students. Greater involvement of students is needed in planning some programs.

Equipment and supplies. Most of the districts emphasize the need for greater selectivity and adequacy in textbooks and other learning materials; laboratories for science, industrial arts, homemaking, music, vocational education; and other hardware.

Part-time programs for dropouts and adults. All suburban districts except one strongly emphasize the need to expand part-time programs of secondary education for adults and dropouts. There is little fundamental difference between the suggestions of suburban and city districts. Cities propose year-round programs during the day and evening. Perhaps the educators in cities emphasize work-study programs more strongly than persons in other types of districts. No differences are found among those classified as independents, with one exception. In this case the leaders would like to open up the present system to accommodate adults in the secondary program on a part-time basis during the day and in the evening. Some activities thus would accommodate youth and adults concurrently. Thus, with adequate breadth, flexibility of organization, and relevance to needs of individuals all interests could be served.

Indians

In communities with a large proportion of Indian students there are some special emphases on objectives. In three communities there are large components of Spanish-American students for whom these emphases are equally applicable. These are stronger guidance programs, special language development programs, work-study programs for youth, work-study programs for adults, and programs designed to foster cross-cultural development. One statement is as follows: "We need to learn better how to promote cross-cultural development, to learn to value and insure the preservation of the good things in each culture."

There is a common thread of deep concern on this last objective about promoting cross-cultural development. This concern is not limited to Indians. It applies to all other identifiable cultural groups.

THE EDUCATIONAL PROGRAM

The concept of program serves as a means of defining objectives into categories that are feasible for organizing human activity, identifying individuals as members, and establishing accountability for achievement. The ideas that have been acquired from the literature, consultants, and persons in the sample of school districts of this study apply to middle or junior high schools and high schools.

The ideas have a variety of support, including some research and experimentation with contrasting groups to determine if a particular program yields measurable results that are intrinsically different from those of another program. Methods most commonly used to obtain measures of results are (1) standardized tests of knowledge, skills, and attitudes; (2) observer ratings of pupils on particular traits; (3) staff ratings of pupils in response to questions or problem-solving situations; and (4) pupil evaluations. Some ideas are supported by consensus of individual judgments that may be based on knowledge acquired intuitively from experience.

The proposals in this study to accomplish educational objectives, either defined or implied, include all of these methods. Most judgment is based on information from particular actions and programs that do not have control models for comparisons. For example, a teacher may change the content of a course and modify the methods of instruction for a particular group of pupils without having a comparative (or control) group that would follow the existing content and methods. The results arising from the change are judged by the teacher in terms of past experience with similar groups as she perceives them. Also, the teacher's interaction with pupils throughout the period of instruction provides information on the progress of those with various learning difficulties.

Some of the proposed change in education during the 1970s is based on the results of rigorous experiments. Some is based on common knowledge that is confirmed in the daily observations of teachers and others with professional training.

Breadth of Program

The most common theme of need is the breadth of offerings to accommodate all pupils as adequately as possible. This idea covers all aspects of education including fields of cognitive knowledge, skills in verbal and written communication, skills that may be useful in a chosen occupation, skills that may be useful and enjoyable to the individual, and others regardless of the person's occupation.

The emphasis in the middle or junior high school is to carry forward the development of conceptual knowledge and skills to higher levels than formerly. In the so-called basic fields the skills of verbalization, higher order of mathematical knowledge, and analysis of social and historical issues have high priority.

Practical and fine arts are broadened in scope and intensified in depth of skills and conceptual knowledge. These fields which were once considered exploratory and peripheral are becoming as central to the full development of individuals as those formerly regarded as basics.

There is little difference in breadth of programs needed among types of districts, as perceived by educational leaders. The cities place greater emphasis on industrial arts and vocational training as early as the junior high school, largely because of a high proportion of pupils who have not been promoted each year because of low academic achievement. Many of those pupils have physical and social maturation that is two or three years ahead of grade placement. The suburbs and independents place high priority on these fields of instruction.

In the schools for Indians, leaders strongly urge a comprehensive educational program in the junior high school that would be extended in depth in the high school.

There is a proposition, held by some persons outside the educational profession, that the junior high (middle schools) and high schools should restrict the breadth of their programs to so-called basics: language arts, social studies, mathematics, science, and foreign languages. The principal argument in favor of this idea is that sufficient time would be available for pupils to reach a high performance level in these fields as compared with present achievements. They argue further that other skills and knowledge could be acquired outside the school or on the job.

Educational leaders, and most other citizens, contend that the line between basic and other essential components of education is difficult if not impossible to define. Moreover, the motivation and learning values in fields like industrial arts, vocational subjects, and fine arts enhance rather than detract from achievement in the so-called basic subjects.

Logistics of Instruction

The content of experience in elementary school is restructured in the junior high or middle school into more distinct fields of instruction with greater specialization. The degree of specialization is increased further in high school. The instructional practices that are gaining wide acceptance are as follows:

1. Planning and teaching on a collaborative basis by departments or instructional fields rather than on a completely individual basis. Individuality of the teacher is not lost but enhanced.
2. Opening the school schedule to greater flexibility to provide for more independent study and individualized pupil progress within a broad social context. The pupil is not isolated from interaction with others but he has access to a greater variety of learning experiences. The schools of this study have found that pupils in grades six, seven, eight, and nine cannot use as much time independently as in later grades. Fast learners can use more than slow learners. In the junior high grades the range of independent time for study is between 15 and 25 percent of the student's scheduled time. In high school the range is from 20 to 40 percent. There are writers who claim that

higher percentages should prevail. Further experience is needed to support their claims.

3. Use of new technological media to supplement the teacher. These include films, tapes, computerized instructional units, learning centers, closed circuit television, and others.

4. Open physical environment. School campuses are being designed with more open space such as pods or entire buildings to contain laboratories, shops, gymnasiums, performing arts (music, drama, dance); and other space organized to accommodate entire departments or fields of instruction. Arrangements allow for various sizes of groups, team teaching, and large group instruction. Other characteristics include few doors and corridors, no bells, carpeted floors, small laboratory areas for individuals, viewing rooms for small groups, and central areas for small groups to congregate for conversation and lunch.

5. Differentiation of staff. The middle school and high school are increasing the extent of specialization of effort of staff members. Head teachers, supervisors, special subject teachers, teacher aides, research specialists to assist in testing and evaluation of pupil achievement are examples of the trend of staffing roles. Collaborative activity mentioned earlier is a means of coordinating and focusing specialized talent.

6. Use of community resources. New and imaginative approaches to the use of local community resources to extend classroom learning experiences are being developed. This practice may eventually include contracts with business and industry to conduct special training programs in some fields such as industrial arts and vocational education. There are some enthusiasts who claim that special educational tasks in all fields of instruction may be contracted to outside agents.

These practices are promising but they are too new and untested for general evaluation.

THE STAFF

The staff is the second category of needs of school systems according to the respondents in this study. The areas of need include: professional or technical knowledge and skill, qualities of personal competence as community leaders, effective differentiation of roles, appropriate work loads, in-service programs for continuing education, new approaches to educational preparation of beginning teachers, teacher aides, and auxiliary service staff.

The organization of school staffs of tomorrow will be different from those of today. There will be changes in the characteristics of individuals in the systems. The objective in this study is to capture the basic image of the staff in its personal and collective character and then to infer the financial implications of potential changes.

There are two images that are reflected in the literature and in the minds of people in the school systems. The first is the ideal or the superman. He has everything: knowledge, skill in teaching, ability to motivate pupils, influence as a citizen, deep commitment to education, personal affability, and other superior qualities. The second image is the real man, the one who is constantly viewed against the other. The expectations for the schools of the 1970s seem to call for a better fit between these two images.

Teachers, administrators, pupils, and other respondents express their views in ways such as,

> We need more people with vision in the profession, more teachers who are highly knowledgeable in their fields of instruction, more teachers who understand students and their needs, more administrators who understand the teacher's problems, and more individuals who commit themselves to careers in education and all that this entails for continuous development.

There are some common views among respondents in all types of districts surveyed in this study. First, there is strong doubt that sufficient numbers of highly talented personnel will be available to give the schools the thrust they need in the 1970s. Thus, one of the crucial questions to be resolved is how to deploy the staff to obtain a maximum interaction between the most talented staff and all students. This question is raised most frequently in connection with the reasons advanced for revising the organization and content of the curriculum. Second, there is a common view that staff members need access to a new kind of in-service education program. Third, the consensus of need for teacher aides among staff members in secondary schools is different from that in early childhood and elementary school. Fourth, there is consensus among staff members that the role of the professional educator in society is neither satisfactory to attract sufficient numbers of talented persons to education nor to foster the maximum performance of those in the field.

There are various suggestions about each of these general views. Some of these may lead to alternative propostions for improvements. For example there are some suggestions in connection with the doubt about the supply of highly talented staff members. One suggestion is to revise the programs of education for teachers in colleges and universities. Most teachers mention that the "practice teaching" experience in their programs is inadequate. There is strong support for a more comprehensive experience such as a full-time internship for a year under the supervision of experienced teachers. Another suggestion is that prospective teachers need more observation in schools prior to an internship. These are among the most numerous suggestions on improving the quality of persons entering the profession.

On the question of how to attract more persons of high potential to choose careers in education, respondents offer a variety of suggestions. Among them are better economic status, better conditions for teaching, more adequate educational facilities, more constructive support from the community.

Suggestions on in-service education programs deserve special mention. The details on content and operation of these programs have not been explored fully. However, there is strong agreement on purpose. A commitment to teaching includes a commitment to continuous study, inquiry, and experimentation. All of this cannot be accomplished solely in the classroom, or in the activities associated with the day-to-day work in the classroom. Teachers need learning experiences outside their classrooms in seminars, conferences, workshops, leaves of absence to return to college campuses for extended periods of time. These activities are found in varying degrees.

However, teachers and other educators are asking for more extensive opportunities for individuals within the educational process. They are asking for something quite different, and that is a program for more group activity to supplement individual pursuit. The program for the staff might involve all members of a department working together in some manner such as a year-long seminar with university personnel and specialists from the community. This approach has been followed in recent years in producing some new curriculum materials, notably in physical science, mathematics, and the social sciences. In some instances the entire school staffs are working together as units on various aspects of the educational program. If this approach is developed there will be a heavy demand for inputs of specialists from universities and the various organizations in society such as health, sciences, communications, and others.

The views secondary school educators express about teacher aides are similar to educators in elementary schools with respect to clerical and statistical services, preparation of materials, and assistance in laboratories and shops. Educators do not seem to be in agreement on the nature of assistance in teaching. In early childhood and lower elementary grades adults, mostly women, are very helpful in assisting teachers in various ways such as supervising individualized activity, and even directing some group instruction. These persons have no professional preparation other than the limited instructions from the teacher.

At the secondary level there is a general view that the maturity of students and nature of the work require assistance from persons with specialized knowledge and skills appropriate for interaction with students. Thus, most teachers in this study prefer teaching interns, beginning teachers, and specialists who might be employed to assist teachers or those who might be brought in from the community.

Staff members express uncertainty about the role of the professionals in society, particularly in the determination of teaching, in the identification of goals, and in the evaluation of educational achievements of pupils. This uncertainty is widespread in all districts included in this study.

Ecological Considerations

Environmental conditions of communities present unique problems in the staffing of schools. One extreme is a community with stability and self-discipline. Students are relaxed, maintain conversational tone in most work, exhibit respect and deference for others, have inquisitive and reflective attitudes about learning, and show self-motivation. The other extreme is a community in deep conflict and disorder. There is much tenseness, lack of confidence in others, much external control from plain-clothes security personnel and uniformed policemen. The schools reflect the same disorder. In these schools students are socially polarized into closed groups or cliques (gangs in some instances). There is much isolation and withdrawal among students.

These extremes are found in every large city, and they have a bearing on the characteristics of the school staffs. There is little doubt that most teachers and other professionals prefer the stable and orderly community, or at least one with conflict that does not exceed the limit of stimulation for social improvement. Most agree that the greatest challenge to personnel is in the community that is in deep turmoil. Few studies are available to describe the characteristics required of staff members in these schools, although in every instance the respondents interviewed in this study have firm convictions from their experience. Some of the outstanding qualities are experience, a sense of challenge, ability to empathize with students, and skill in relating to the pupils. In addition they must have ability to remain sufficiently detached to maintain physical, intellectual, and emotional stamina.

In the suburbs and independent districts the most common concern about the staff is some compromise between subject matter specialization and ability for human empathy and interaction.

Some communities in isolated rural and mountainous areas and Indian reservations have living conditions that affect the holding power of the school district. Persons in these districts identify the major environmental conditions that can be improved as (1) the housing for the staff, and (2) the school environment. Many of these communities have neither satisfactory rental property for teachers nor a market for disposing of a home that they might have for sale. These communities offer low incentive for investment in a home. This is a very serious problem in some Indian communities. In a number of instances in this study, prospective teachers have rejected offers because of unsatisfactory housing for their families. High turnover of staff is attributed in part to this problem.

Another large problem in many of these communities is the relatively barren school environment. This is the place where the educational staff builds its rapport with the community, first with the pupils and through them with the adults. These communities, as observed in this study, export as high as 90 percent of the school graduates and dropouts. In a few instances, including some very isolated Indian communities, the schools are serving as a means for exporting entire families as well as the graduates to communities in other parts of the country with opportunity for better livelihood.

In these cases the schools offer programs for all members of the family, vocational training for the father, parent education in homemaking and family living for the mother, and general schooling for youth. These are communities which provide little opportunity outside of the school for their citizens to achieve social and economic advancement.

These communities need educational staffs with unique talent and great personal strength. A few schools are pointing the way with demonstrable evidence that persons of necessary character can be attracted to these places. Some examples are found in this study where staff members are very active and influential in the community.

Differentiation of Staff

The instructional staffs of public secondary schools may be classified into two groups: (1) teachers who instruct, and (2) those who perform nonteaching functions such as administration and supervision, guidance and counseling, research and curriculum services, and librarians. The proportion of staff time devoted to the latter services in districts ranges from about one person to each four teachers in some districts to a ratio of one to ten teachers in others. Table 8 shows that the average number of teachers for each nonteaching professional staff member ranges from 5.7 to 6.8 in grades seven through nine and from 5.4 to 5.8 in grades ten through twelve in the twenty-eight districts in this study.

The average number of pupils per teacher in grades seven through nine ranges from 19.1 in the suburbs to 23.4 in the cities. The pupil ratio to all academic staff ranges from 16.2 in the suburbs to 20.3 in the cities for grades seven through nine. The corresponding pupil ratios to teachers and to total staff are lower in grades ten through twelve than in the lower grades. The suburbs have some numerical advantage over the other types of districts. Ratios of pupils to staff in specific programs are shown in chapter 5 in connection with costs.

Teachers are deployed by subject-matter or instructional fields. There is a preference to limit individuals to one field except in cases where some persons have outstanding talent in more than one. Other exceptions are primarily in small schools where the necessity

Table 8. AVERAGE STAFFING RATIOS IN SECONDARY SCHOOLS — 1968–69

Ratios	*Cities* *12 Districts*		*Suburbs* *8 Districts*		*Independents* *8 Districts*	
(1)	*Grades 7–9* (2)	*Grades 10–12* (3)	*Grades 7–9* (4)	*Grades 10–12* (5)	*Grades 7–9* (6)	*Grades 10–12* (7)
Average Number of Pupils per Teacher	23.4	21.5	19.1	18.9	20.7	20.0
Average Number of Pupils per Academic Staff Member (All Academic Staff)	20.3	18.3	16.2	15.9	17.9	17.7
Average Number of Teachers per Nonteaching Academic Staff Member	6.8	5.8	5.7	5.5	6.7	5.4

for meeting a minimum breadth of program requires that teachers must be assigned to two or more fields regardless of their competence.

In addition to assignment by instructional fields there are special teachers for particular programs or needs. For example, there are teachers for pupils with special physical and learning difficulties and teachers for remedial instruction in a number of fields. There are special teachers in some general fields such as music, physical education, and science.

There is another type of deployment of teachers involving collaborative or team groupings. Teaching in secondary schools is still largely a solo activity — one teacher with a group of pupils in a segment of the curriculum such as science or mathematics. The typical teacher has 100 to 125 pupils. In special fields the number may be as low as 40 to 50. Team teaching and other forms of group teaching may not reduce the average number of pupils for the teacher, but it is a means of distributing the teacher's time to provide more individual attention to pupils. For example, at its best, all teachers in an instructional field are working as a team rather than separately in studying, planning, teaching, and evaluating their work. With proper planning and the arrangement of space and facilities much flexibility can be introduced. Instruction can vary from large-group to tutorial procedures.

This arrangement is still in an early experimental stage. Only a few schools have gone far enough to test the advantages of team teaching and group patterns of operation. In these cases they have been able to design buildings and facilities to accommodate more team work. There are still problems and limitations to be overcome. The chief one is the instability of staff that results from turnover. Also, those that have maximized openness and flexibility by departments such as the pod arrangement have found themselves boxed in with rigidities between departments. Also, some schools with the more flexible programs have not learned to preserve the integrity of individuality within a highly collaborative structure.

These trends of staff differentiation will proceed as rapidly as program planning can be implemented with redesigned physical environments. Changes will be limited to relatively small projects until these two components can be planned on a comprehensive scale. In a number of schools in this study the staff members and students make no attempt to conceal their discouragement and frustration. In some instances school buildings are a patchwork of additions and renovations extending back a half century, but today they are worn out and in need of total replacement. Staff members refuse to undertake broad-scale revisions in programs that could not operate effectively under present environmental circumstances. This is happening to a great extent throughout the country, despite much effort to accomplish some improvement in the face of handicaps.

The component of nonteaching professional staff service is increasing more in middle and elementary schools than in high schools. The proportion of staff time devoted to nonteaching functions has been larger in the high schools than in the other grades for some time. Now the lower grades are moving up in this pattern of staffing and may become comparable numerically to the high schools, if not in the composition of nonteaching functions performed, during the 1970s.

SUPPORTIVE SERVICES

The differentiation of roles of staff members in educational systems has led to categories or groups serving particular functions. These may be divided into two types of personnel: one whose members have had professional preparation in colleges and universities, and the other whose education may or may not have any requirements of formal education. The first group, commonly called the academic staff, consists of administrators, supervisors, teachers, librarians, counselors, research and curriculum specialists, psychologists, psychiatrists, and social workers.

The second group consists of the auxiliary or nonacademic staff. This includes custodians, clerks, maintenance and repairmen, transportation personnel, health personnel, and teacher aides. The aides are an emerging group of workers whose role appears to cover a wide range of activities such as clerks, computer operators, laboratory technicians, and assistant teachers. In the field of health some nurses are college graduates who do some teaching of health and safety.

The relative size of the various specialties among staff groups is one basis for considering the personnel needs of school systems in the 1970s. As shown previously (see table 6 in chapter 3) the average practice over all grades in the districts of this study has one nonteaching academic specialist for 7.5 teachers in the cities, 6.3 in the suburbs, and 7.2 in the independent districts. These averages include members of central office staffs and those assigned to individual schools. Most of the teacher aides appear in the elementary schools with few in middle schools and high schools. The overall average is one for 40.6 teachers in the cities, 22.7 in the suburbs, and 41.6 in the independent districts. The schools vary considerably in the kinds and numbers of nonteaching specialists.

To complete the general view of staffing we next turn to the distribution of the nonacademic staff. Table 9 shows the percentage which the total nonacademic group is of the total academic staff. These figures give only a general idea of staffing in twenty-eight school districts. Since it is not possible to obtain an allocation of these personnel by grade levels the figures are for the total district.

The nonteaching staff components of all supportive services are large. They range from about 13 percent to 16 percent of teachers for professional functions and from 44.1 percent to 71.9 percent of all academic staff for auxiliary functions. The total educational program calls for personnel ranging from 1.6 to 1.8 times the number of teachers. These figures and the pupil-teacher ratios help to explain that education is a labor-intensive activity.

Figures are not available to indicate trends but there is general knowledge that these nonteaching services have increased during the past quarter of a century. Some further increases are anticipated by educational leaders during the next ten years. There is evidence in the judgment of school leaders and in the literature to indicate that the schools need a numerical staffing in relation to the student population that is considerably greater than current average practice.

Future Supportive Services

There are two general propositions about the long-term development of educational systems that would modify the present structure of supportive services, as well as instructional and physical facilities. The first proposition is that technological developments, such as two-way television and further computerization of library materials and instructional programs, will make unnecessary the mass movement of the school population to learning centers (schools) every day. Students will be able, so proponents claim, to do much of their study

Table 9. Average Percent which Nonacademic Staff is of Academic Staff — 1968–69

Districts (1)	*Health Employees* (2)	*Clerks, Secretaries, Statisticians, Teacher Aides* (3)	*Security Officers* (4)	*Operation and Maintenance Employees* (5)	*Food Service Employees* (6)	*Transportation Employees* (7)	*Total Nonacademic Employees* (8)
Cities: Twelve Districts	1.5%	17.3%	2.2%	16.5%	11.6%	2.4%	51.5%
Suburbs: Eight Districts	1.4	19.6	1.1	17.0	12.5	3.3	54.9
Independents:* Five Districts	1.4	13.6	0.0	14.6	10.8	3.7	44.1
Indians:† Three Districts	1.8	25.5	0.0	13.2	13.4	9.0	71.9

* Districts outside of large metropolitan areas.

† Independents with 30 to 70 percent of Indian pupils.

at home and participate in dialogue through visual communication media. The pattern of attendance at school would be established with enough frequency to meet the needs for essential face to face social experiences and group learning activities.

Those who support this view argue for a great expansion in work-study programs. In addition they believe that if technological devices as just mentioned become available for mass use students might spend more time at home and attend school perhaps three or four days per week. Some students might attend school part of each day and work the other part.

The second proposition is that universal attendance at school will continue for five days per week, with exceptions for substantial numbers of pupils in work-study programs. This assumption is held by nearly all of the persons questioned in this study. The literature supports this assumption, although there are some writers who speculate otherwise.

There seems to be consensus among the vast majority who hold this second view that the traditional secondary school day should be extended from early morning to late evening hours. The school day should be organized in such manner that students can complete their study at school and discontinue most of the traditional practice of homework. All students would not attend at the same hours, though the majority might attend during the time from about 8:30 a.m. to 4:00 p.m. The other view associated with this general proposition is that the secondary school should be open to a greater extent to the adult population. There is little reason many courses cannot be open for youth and adults where staff and facilities are available without overcrowding.

This second proposition implies expansion of the whole range of present supportive services. Additional food services, recreational activities, transportation, and custodial services would expand in many districts.

Those who argue against this second proposition emphasize the need for reducing the movement of masses of population in urban society. They also fear the increase in the bureaucracy of the public school system with attendant rigidities and additions of programs they perceive as irrelevant to education. For example, driver training is a recently established program that is opposed by many who hold this view.

Those who favor activities such as driver training claim that the school is the most feasible place to offer this training, considering effectiveness in training, economy of cost, coverage of the target population, and economy in the time spent by the learners. The operation of this program does not have to encroach upon the time of participants for their basic educational needs, nor upon the operation and the cost of the educational programs. With proper differentiation of staff roles the auxiliary services do not encroach upon the vital educational functions.

This illustration can be extended to a wide range of socially useful purposes that can be served by the secondary school. Thus, the image of the secondary school, as viewed in terms of programs and the essential supportive service components of those programs, emerges out of the conception of purpose. Recent studies show that the greatest needs for trained manpower in the 1970s are for professional, technical, and semiskilled roles. The secondary school will expand its role not only as a contributor to production of trained personnel but as a consumer or field of employment.

CAPITAL FACILITIES AND MATERIALS

The image of the secondary school is incomplete without some description of the physical environment. This dimension includes school plants, grounds, buildings, furnishings, and instructional and learning materials. The literature records variations in basic concepts of purpose, function, and architectural design. There is a great volume of literature on architectural characteristics. In recent years the literature shows increased emphasis on purpose and function of buildings and grounds as related to educational processes. Castaldi [14] emphasizes the importance of considering psychological principles of learning in the planning of buildings and facilities.

Central Tendencies

One finds in the literature trends of thought that move like a pendulum from one point in time to another. The characteristics that distinguish one period from another reflect compromises with many forces. Each generation exhibits its own interpretations of purpose, inventive genius, limitations of resources, and other variables. The next generation may be no exception. There is evidence of much frustration among educational leaders today. Much of this results from inability to design facilities for the future that may have a probability for greater contribution to educational excellence than the facilities of the past.

The fundamental criteria for planning and designing buildings and facilities of the future are as follows:

1. *Utility.* Maximum contribution to the educational process: suitable space in appropriate amount to permit a wide variety of groupings of pupils and cooperative work of the staff
2. *Aesthetics.* Pleasing effect on pupils, staff, and community
3. *Flexibility.* Capable of modification to permit changes in programs, growth in pupil enrollments, versatility in serving different functions, and ease of change from one use to another
4. *Community centered.* Indigenous part of community, offering convenient access and use by various groups

To meet these criteria most efficiently, school systems are engaging in planning on a scale that has not been found in the past. Long-term projection is the key thought. Planning includes considerations of population density and mobility, distribution of elementary, middle, and high schools and all of these four basic criteria just listed. In the great cities, deployment of high schools is related to locations of junior colleges and other institutions that may afford collaborative programs for some students. Availability of space in these communities may require high-rise type buildings in some sections.

In some areas that are in transition from residential to business, buildings are being designed for multiple use. Schools occupy lower floors and businesses the upper ones. In other cases new schools are being located on the outer edges of neighborhoods in the direction of residential development and away from the declining slum centers.

Caudill and others [21] emphasize the planning of schools with "built-in second guess." This thought illustrates a common finding in field observations, namely staff members in new buildings always find examples of changes that could have been made in the planning. Many of these are inevitable but among them there are some basic rigidities that could be avoided.

In communities where space is available the campus-type design of the school plant is the most common one in recent plans. The traditional multistoried building under one roof with 20 to 30 percent of floor space in corridors and stairways is being abandoned wherever possible for a campus with multipurpose buildings clustered and arranged conveniently to each other. This decentralization of space has several advantages. Large masses of students are deployed into groups of more appropriate size with advantageous social distance. Student movement can be scheduled with flexibility to foster an atmosphere of inquiry and reflection that is the essence of a learning environment. Open courts and covered walkways between buildings can eliminate most inside corridors in buildings in much of the nation. In the extreme northern sections of the nation decentralized designs also can be made without large extra costs as compared with those in milder climates.

Special Features

The special features of buildings for middle schools and high schools do not vary widely in basic types of space. First, large areas are planned to accommodate one or more fields of instruction such as language arts and social studies, science and mathematics, fine arts and performing arts, industrial and practical arts, physical education, the library or learning resource center, food service, central services of administration, health and guidance, supervision and other activities.

These fields and activities require a variety of spaces, some for large group instruction for fifty, one hundred, and perhaps three hundred persons. Small seminar rooms for fifteen to twenty-five persons should be located strategically. Laboratories for science are grouped to facilitate exchange of materials and cooperation of staff. Adjunct laboratories are located for individuals and small groups to work independently without disturbing classes in regular laboratories. Others include such examples as a photographic darkroom and a greenhouse.

In the fine arts, special laboratories are needed for drawing, painting, sculptoring, and other forms. In the field of music special rooms are essential, including large ones for orchestras and choral groups and small ones for individuals and ensemble groups.

In the fields of practical arts, special laboratories are necessary in homemaking, graphic arts, woodworking, metalworking, ceramics, typewriting, and others.

Physical education requires a variety of types of space, not just an athletic arena. Athletics are important but so are such activities as intramural games, calisthenics, and dance. The size of the school dictates the amount and arrangement of space. Schools need a special therapeutic area in the gymnasium specially equipped for pupils with serious physical handicaps. Swimming facilities, and outdoor play areas for intramural activities are necessary. Interscholastic athletics have dominated the program in physical education in most secondary schools in the past. Many schools are demonstrating that athletics need not necessarily interfere with a complete program in physical education.

Libraries are becoming total resource centers including films, tapes, and other instructional materials in addition to books. Special rooms and carrels are needed for reading, listening to material on tape, viewing films, faculty work areas, and browsing.

Teachers and other staff members need office space where they can work alone and in cooperation with colleagues. The trend today is to locate this space centrally in the wings, pods, and even separate buildings that house the respective instructional fields.

Adequate campuses have buildings with climate control for heating and cooling. Closed circuit television is essential, including a studio that is completely equipped with videotaping apparatus and a multichannel system to provide programs in various parts of the building from either stock film or broadcast channels.

Finally, the schools of tomorrow are future oriented. Much of the space is designed for major modification in arrangement and use. There is a sharp break with tradition in the design of some space that may have great psychological impact on the "life style" or atmosphere of the school. Some examples are areas for informal lunch and lounge, and strategic locations of space for display of students' work of arts, crafts, and other productions.

SUMMER SCHOOL (EXTENDED YEAR)

Among the twenty-eight school systems participating in this study none is moving toward a year-round operation. In all cases the summer school serves relatively few students for five or six weeks. School officials report that the demand, as reflected in enrollment, does not suggest any acceleration toward a general extension of the school year.

Students have three types of objectives; one is to enrich their education, another is to accelerate the date of high school graduation, and the third is to strengthen performance in areas of weakness.

Part-time programs for adults drop sharply in the summer. The greatest decline is among the nonvocational programs.

There is general agreement among persons interviewed in this study that schools should adopt a policy either to increase the length of the regular school term gradually, or to expand the summer school with more offerings under conditions of greater appeal to students.

PART-TIME PROGRAMS FOR ADULTS AND SCHOOL DROPOUTS

The enrollments in these programs constitute a small proportion of the numbers in grades one through twelve during the regular school year. The cities and independents enroll about 3 percent of the number enrolled in the regular day school. The suburbs average 4.7 percent. About three-fourths of the students are taking work that is equivalent to post-secondary level education. From 12 to 21 percent are taking typical secondary school work, and from 3 to 8 percent are performing at upper elementary school level.

There is a wide range in these programs among school districts. Three cities separate these programs but do not report data on enrollments and expenditures. Two suburbs and three independents do not operate programs for these groups. In some districts the size of these programs is affected by the accessibility of post-secondary institutions.

Among the twenty districts reporting data on these programs the largest enrollment in one district is 23 percent of the regular day school enrollment. The next highest is 11 percent. The lowest is about 0.01 percent.

Methods of accounting for these programs are not sufficiently developed to provide a very accurate picture. Many courses have a short duration of two or three months. Many individuals are irregular in following existing sequences. Hence pupil accounting does not distinguish between those who are in and out of the programs and others who follow consistently for completion of a given program. Also, there is difficulty obtaining information to distinguish between recent dropouts and those who have been out of school for some time. Another distinction which cannot be obtained is between the relative amounts of vocational and basic education.

Investigations into the reasons for lack of these distinctions reveal some reasonable explanations. In the first place, the absence of complete accounting is due to lack of adequate staffing. These programs are woefully understaffed, both at the administrative and service level and the instructional level. Second, most programs are thin collections of ad hoc courses, offered to meet the highest priority of demands and to stretch available resources as far as possible. Third, many programs are dependent upon tuition and fees from students for operation. Fourth, many of the students are undergoing a severe personal readjustment. Some of the younger individuals are trying to establish self-confidence, a positive self-image, and a degree of success which they lost before leaving the regular school. Some adults are preparing for new occupational endeavors and they find themselves in need of updating their basic skills as well as learning new vocational skills. Both types of these individuals need professional assistance that goes beyond didactic instruction to include much personal attention, counseling, and guidance.

The Continuation High School

Among the programs for adults and school dropouts there are schools by various names that are fundamentally continuation high schools for dropouts and borderline performers in the regular schools. These schools deserve special attention. They have existed on a small scale for several years in most of the large cities. Some have been operated by other agencies such as the YMCA, churches, civic groups, and the school district.

In this study there has been an opportunity to observe some of these schools for recent dropouts and dropout-prone students during the middle school and high school years. Some of these are operated by the public school system, others by nonpublic school agencies. Some of these schools are treated as experimental programs largely because of the planning and the new approaches being tried.

The population being served includes students who have failed to succeed, or are near failure, in the regular school. Most of them have lost motivation and a sense of purpose. Some of them are emotionally disturbed. Others are in a state of hypertension. They exhibit apathy, withdrawnness, and lack of self-discipline. They are disorganized to an extent that they are incapable of sustained periods of concentration on any task. Whatever they do is at a low level of performance. The backgrounds of the students cover the total range of socio-economic environments.

The rationale of students is especially important. They view themselves as victims of poor teaching and guidance. They criticize the regular school for a curriculum that is unsuited and irrelevant to their needs, and one that is archaic and bureaucratically insensitive to the modern world. To them the regular school environment is cold and cruelly competitive. In the continuation school they say, "Here you count, the teachers are on your side. They care for you and believe in you."

These schools have certain characteristics in common. First, the environment is created to serve these pupils. The school has its own identity. It is small for close personal identification of each individual with his peers and with the staff. It is removed from the regular school. Second, the program is unorthodox. There is no formal structure by grades, courses, and the normal extracurricular activities of the regular school. The physical environment is simple and informal. Third, the instructional process is informal and highly individualized. Staff members give personal attention and provide positive reinforcements to help the students gain self-confidence and to acquire new skills. Fourth, as soon as students exhibit sufficient confidence and stability the school obtains employment for them as part of the essential therapy for reentry into the mainstream of society.

These are examples of what can be done for students with severe problems who can be attracted to an institution that is specially designed for them. The significance of these schools is twofold: First, there is knowledge of how to operate an educational environment for the few individuals who are unable to succeed in the comprehensive school for the great majority of the population.

Second, public educational policies may have been dominated during the last half century by the proposition that all individuals can develop fully within a formal school environment if it is sufficiently comprehensive. The comprehensive school with flexibility and pluralism of offerings recognizes and demonstrates the need for adjusting to individual differences. However, there is now sufficient evidence, even among our most exemplary schools, to suggest that alternative educational environments may be necessary for something like 5 to 10 percent of the school population.

Third, there is ample evidence that the public school systems can possess the capacity to operate mutually exclusive and noncompeting educational environments. Those who argue the proposition that agencies outside the public school systems must be depended upon to develop responsive approaches to solve the problems of youth with most extreme difficulties do not present the facts of achievement in the public schools.

SUMMARY ON SECONDARY EDUCATION

There is common agreement in the literature and in the field that secondary education should change substantially during the 1970s. Some extremists impatiently call for a revolution in purposes, structures, processes, and allocation of resources. These seem to be few in number, at least those who have expressed their views in print. No respondents in this study could be classified as advocating a continuation of the status quo. All of them estimate the needs to be in excess of realistic accomplishments.

There is a wide range in educational practice that extends across state boundaries, among districts within every state, and among schools within many districts. Some schools that were leaders, and in many ways exemplars, a few years ago now find themselves being passed up by vigorous and innovative staffs, backed by communities that are receptive to orderly and well-planned change. Those that have tagged along for years as late followers may find themselves hopelessly lost unless, through some fortunate combination of circumstances, they can generate the power to take some gargantuan steps forward.

In recent years much effort has been concentrated on raising the performance of individuals with personal difficulties and limited home environments. The great challenge of the next decade may well be to apply this principle to schools and school districts throughout the nation. An approach to attack the weaknesses of the system as an indirect means of reaching the individual may be far more productive than those of recent years.

Image of the 1980 Schools

There are schools scattered throughout the country that represent pacesetters for general improvement in education. They are exemplars for most other schools, not because they have "arrived" but because they are "becoming." They are unique for the course they have set and for the evidence of their performance. They are the vanguard that in previous decades the late professor Paul Mort called "lighthouse schools."

Several of this type are included in this study. They are the schools to which the theorists go to discover new ideas and to test emerging propositions. In many ways they exhibit the merging of two major approaches over the past half century of how to individualize education for the total population. Mort and many of his colleagues concentrated on theories concerning the adaptability of the school system — the capacity to discard obsolete functions and to apply new knowledge effectively. The other approach is represented in the works of psychologists and other social scientists concentrating on the learner and the learning process like: Jean Piaget, J. McVicker Hunt, Samuel A. Kirk, B. F. Skinner, E. L. Thorndike, Benjamin S. Bloom, Maria Montessori, Jerome Bruner, and a host of others.

These schools are distinctive on six gross characteristics, as follows:

1. *The Process of Decision-Making*. There is something unique about the attention given to educational objectives. They have become a subject of regular study, evaluation, and revision. Decisions on major innovative changes occur after exhaustive study, wide involvement of the community, and strong leadership by the school.
2. *The Educational Program*. The program is distinctive for its relation to objectives and its breadth of curriculum. Much of the staff effort is devoted to evaluation of the learning materials and revision of content.
3. *The Structure of the Educational Process*. The schedule of activity is more flexible than the traditional school. It varies to accommodate differentiated sizes of instructional groups, and to provide time and attractive settings for independent study.
4. *The Staff*. Specialization, division of labor, and collaborative ac-

tivity are characteristics on which these schools are distinguished from the typical ones. There are some teacher aides but numerically fewer than in the elementary schools. The climate of the school is distinctive for its commitment as a responsibility of the total staff as well as of individuals. The staff spends less energy on student discipline because the environment is conducive to greater peer discipline.

5. *Physical Resources.* Most of the innovative schools have new buildings and facilities that are designed to serve the educational programs. They provide the climate to facilitate the learning activities of students and the work of the staff. Others have relatively new buildings with additions and some major renovations. There are irreducible qualities of buildings and other facilities among the essential components of the educational environment that characterize these schools.

6. *School and Community Relations.* These schools open the curriculum to an increasing number of adults to continue their education. Parents and other citizens participate as aides, consultants, research assistants, and in other roles.

A few schools are now at about 1976 on a 1980 timetable of development. Probably not over two-thirds of the secondary schools of America will reach this stage of development earlier than 1980, assuming favorable conditions for advancement. The other third may not arrive until 1990 unless the fundamental needs for their performance are provided soon.

Prospective Innovations

This study suggests two basic patterns of innovative thrusts in public secondary schools during the next decade. The first one is an eclectic approach. This one chooses from a limited number of high priority needs of fundamental character. The second one is a general approach, including the total range of relevant needs. Alternative choices are made within fundamental categories of needs but not among them.

The federal programs for education are typical of the first approach. They have served the purpose of stimulating a wide variety of innovative activities. The federal programs indirectly have stimulated some additional activity in school systems. Furthermore, much innovation occurred in recent years as a result of a relatively favorable social and economic climate for change.

The most comprehensive changes observed in this study are found in instances where entire schools have been reorganized. In every example the change occurred in conjunction with major renovations of old buildings or with the construction of a new campus. The change is total in concept and design, although phases are established for orderly development.

The strategies or styles vary because of the differences in the human characteristics. Some of them started by formulating objectives and choosing staff members with favorable and positive attitudes a year or two before launching the changes in the program and the instructional processes. These were timed with occupancy of new buildings. In other cases the new buildings came first and the human reorganization followed. Most of the respondents in this study prefer the former strategy.

Eleven middle schools and nine high schools observed in this study have made such comprehensive changes that they can be classified as highly innovative schools. Some are more advanced than others. All exhibit three common factors: (1) purpose; (2) commitment of staff, students, and the community; and (3) a favorable physical environment. These appear to be the most basic factors.

One other factor which may be extremely unique for its implications to schools in general is the disposition to proceed with a total innovative program when the logistics indicate a high probability of success. None of these schools waited until it had all foreseeable needs in hand. For example, only a few districts have installed some of the latest instructional media such as closed circuit television and electronic video recorders. Others have plans to obtain such equipment as soon as resources permit.

Most of these schools have undertaken these changes with little if any increase in the number of professional staff members. About half of them have added a few teacher aides to assist teachers in a variety of activities such as preparing materials, monitoring resource centers and study areas, and serving as laboratory technicians.

An illustration of pupil-staff ratios of eleven middle schools and nine high schools is shown in table 10. The average number of pupils per teacher is 22.8 in the middle schools and 22.1 in the high schools.

Table 10. PUPIL-STAFF RATIOS IN TWENTY INNOVATIVE SECONDARY SCHOOLS — 1969–70

Item (1)	*11 Middle Schools* (2)	*9 High Schools* (3)
1. Average Enrollment per School	1,170	1,697
2. Average Number Teachers per School	51.3	76.7
3. Average Number of Nonteaching Professionals per School	6.9	9.3
4. Average Number of Pupils per Teacher	22.8	22.1
5. Average Number of Pupils per Academic Staff Member	20.1	19.7
6. Average Number of Teachers per Academic Staff Member for Nonteaching Functions*	7.4	8.2

* Administrators, counselors, librarians, social workers, and others.

The ratio of pupils to total academic staff is 20.1 in the former and 19.7 in the latter. The ratio of teachers to nonteaching academic specialists averages 7.4 in the middle schools and 8.2 in the high schools. Those figures are close to most district-wide averages.

The overall average pupil-staff ratio is only at the rate of fifty staff per one thousand students. This figure is no larger than district-wide averages in most of these districts. It is a figure which many spokesmen have described as a minimum and not an adequate size.

Staff members vary in their estimates of the need for teacher aides. They range from one aide to four teachers to one to ten. There is no common agreement on the role of aides. In the high schools the predominant view is to assign them to monitoring duties, preparation of materials, and to serve as technicians in laboratories and the operation of complex equipment such as the broadcast console and the computer system. In the middle schools there is a greater tendency to use aides as assistants in the classroom in addition to these other duties.

The experiences of these schools suggest certain propositions about the prospects of innovative activity among schools generally. First, many schools can accomplish more change than they think. Second, there are certain irreducible standards in the fundamental ingredients of change. Minimums of human willpower and talent, of community responsiveness, and of physical resources exist in realistic terms. Third, some of these components are latent in many communities, others need only modest stimulation and expansion. Most personnel have greater potential than is generally perceived. A renewal of public confidence and strong in-service education programs could yield great returns in performance. The greatest needs for immediate costs are in the components of capital facilities and small-item materials for instruction.

Fourth, there are hundreds of little districts that cannot provide the requisite human and physical environment for educational performance that the future will demand. Improvement in the basic organization of local school districts is a prerequisite to everything else in many communities.

Fifth, there are some schools, mostly in the large cities, where social conflict has temporarily all but stifled the hope of educational renewal. Drastic and constructive action can be taken during this next decade to resolve this conflict which threatens to inundate these schools from without.

Sixth, the presence of some exemplary schools in the heart of great cities, on isolated Indian reservations, in the suburbs, in the small towns, and in every type of community suggests that there is great strength in the public school system. Therefore, a general approach toward total innovation on a school by school basis within the system can renew this strength and thereby utilize present and additional resources more effectively.

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5 | COST ANALYSIS OF PROGRAMS

INTRODUCTION

The design of this cost analysis is limited to broad program categories. It is a basic design within which further breakdown to specific program entities could be accomplished with some modifications in school district accounting practices.

This analysis is limited to current operating expenditures for the fiscal year 1968–69. These expenditures exclude payments for capital outlay and interest on school debt for capital outlay. They include payments from the school district budget for general control, instructional service, operation and maintenance of facilities, fixed charges, transportation, food services, community services, and other school services. Part-time programs for adults and dropouts, and summer school, are analyzed separately.

The expenditures are organized into the following categories:

I. The Regular Day School
   A. Prekindergarten programs
   B. Kindergarten
   C. Special programs
      1. Classes for pupils with severe mental and physical handicaps
      2. Programs for socially and emotionally maladjusted pupils
      3. Remedial and compensatory programs for pupils with severe learning difficulties
      4. Vocational-technical classes, defined as those qualifying for federal reimbursement
   D. Basic elementary programs — grades one through six

- E. Basic middle school programs — grades seven through nine
- F. Basic high school programs — grades ten through twelve

II. Summer School (Extended Year)
(Same categories as the Regular Day School)

III. Part-Time Programs for Adults and School Dropouts: Twelve Months

1. Elementary school level
2. Secondary school level
3. Post-secondary school level

The data forms for these programs are shown in appendices B, C, and D. These forms show the broad categories of programs for which educational purposes and objectives can be described in each school district. The pupil enrollments are counted and distributed by respective categories. Next, teachers and other academic staff members, including teacher aides, are likewise counted and distributed to respective programs in proportion to time devoted to them.

The next allocation is the distribution of nonacademic staff only to service functions by grade level. Data are not available to make good estimates of these personnel at a further breakdown by programs.

The allocations of expenditures are classified in two large groups, one for salaries of academic staff and another for all other current operating expenses. Actual salaries for academic staff members are aggregated by grade level. The average salary per staff member by grade level is then applied to the number of staff members allocated to the respective programs. These expenditures constitute about 70 percent of the total operating budgets.

The second large component of the budget, expense other than academic staff salaries, is prorated to grade levels by nonteaching service functions. The salaries of some nonacademic staff members, such as teacher aides, are aggregated according to assignments. Others, such as secretarial and custodial staff, are prorated within grade levels on a per pupil basis. Other expenses for materials that cannot be identified are prorated on a per pupil basis. For example, expenses for instructional supplies and upkeep of buildings are allocated to programs on a per pupil basis.

Perhaps this description is sufficient to explain the general structure of program costs in this study. In all districts about four-fifths of the current operating expenditures in the regular day program are actual allocations to grade level, with prorations to respective programs based on average salary per staff member. About one-fifth of the operating budget is prorated to respective programs on a per pupil basis.

Two other adjustments should be mentioned at this time: (1) unit costs, amounts per pupil, for the regular school year are adjusted to the base of 180 days which is the most common length of term; and (2) retirement payments for academic staff members are adjusted to 19.3 percent of salary payments to individuals. This figure is the average amount reported in New York City, Great Neck, and Elmira. New York State has a retirement system that is funded from all sources of revenue through local district budgets. This state comes closer to having a fully funded system on a current basis than any state included in this study. These adjustments are made to achieve comparability of data.

REGULAR DAY SCHOOL

It may be helpful to reiterate that the focus of this study is on early childhood and basic elementary and secondary education. This objective requires a design which puts the special programs into perspective and differentiates them in terms of pupils served and the inputs of resources. Thus, this cost analysis shows a distribution of pupils by grade levels and programs. The respective resource inputs and current operating expenses are adjusted to a 9 month (180 day) school year. Expenditures for capital facilities are excluded.

This design is based on the fundamental assumption that equality of educational opportunity among individuals will result in variation of inputs and costs. At the present time individuals with special needs are grouped into the categories as listed in this study. These categories are suitable for combining and averaging among specific programs of common nature.

The distinction between *special programs* and *basic programs* is based on organizational and operational structures that permit the system to adapt to the variable needs of individuals. The term *basic* *programs* is not synonymous with the concept of basic education. The latter suggests that which is common to all individuals and which constitutes the irreducible minimum if everything else had to be eliminated. An example is the mythical three Rs — reading, writing, and arithmetic.

This organization of broad program areas should not be accepted as a final pattern of operation. It can serve as a means of identifying needs at present and locating the areas of the total curriculum where additional resources may be directed. Also, it can serve as a basis for choosing a few categories for a nationwide system of program accounting for initial development.

Distribution of Pupils

There is a widely held proposition that school districts vary greatly in the distribution of pupil needs, particularly those needs associated with learning and other developmental disabilities. At the present state of knowledge, the education of pupils with learning difficulties costs more than for other students. Thus, if one district has a high proportion of its pupils in need of special assistance, requiring extra expense as compared with another district, adequate provision for the extra expense must be made to assure comparability of financial support among districts.

In recent years much evidence has indicated that most great cities in America have a higher-than-average proportion of pupils with learning and environmental difficulties which call for a heavy override of resources to meet the needs of all individuals. Thus, in this study the participating districts have been grouped as large cities, suburban districts adjoining the respective cities, and independents as a basis for comparison. Two districts in Florida, Broward County and Pinellas County, are included among the cities because they resemble this group more than the other two.

The independents are districts that are located outside of large metropolitan areas. Three of these — Gallup-McKinley, New Mexico; Martin, South Dakota; and Todd County, South Dakota — are located on the fringe of Indian reservations and have integrated school populations ranging from 30 to 70 percent of Indian students. These three districts are treated as a special group of the independents.

Table 11. Distribution of Pupils by Programs — 1968–69

Program	*Cities 12 Districts*	*Suburbs 8 Districts*	*Independents*		
			All 8 Districts	*Indian* 3 Districts*	*Others 5 Districts*
(1)	(2)	(3)	(4)	(5)	(6)
Elementary and Secondary:					
1. Special Programs (Grade 1–12)	9.7%	5.8%	14.2%	18.8%	11.6%
2. Basic Elementary Grades 1–6	50.1	48.0	42.1	45.3	39.9
3. Basic Secondary Grades 7–12	40.2	46.2	43.7	35.9	48.5
4. Total Gross Enrollment Grades 1–12	100.0	100.0	100.0	100.0	100.0
Early Childhood:					
5. Prekindergarten	0.5	1.7	2.9	8.1†	0.3
6. Kindergarten	7.7	8.0	8.2	7.1	8.7

* Three independent districts with 30 to 70 percent Indian pupils.

† One district.

The first question to examine is: What is the distribution of the pupil enrollment by designated programs? Table 11 shows this distribution as percent of the gross enrollment in grades one through twelve in the fall of 1968. There are some outstanding differences among these groups of districts. The independents (nonmetropolitan) have the highest percentages of enrollments in special programs, the cities second, and the suburbs third. The low percentages for basic elementary education in the independents are attributed partly to high proportions of pupils who are in special programs.

The low figures for basic secondary grades seven through twelve in the cities and the independents with Indians are attributed largely to high dropout rates in these grades.

The enrollments in early childhood education show up in clear perspective when they are expressed as percents of the base enrollment in grades one through twelve. The prekindergarten percentages range from 0.3 percent to 8.1 percent. The latter figure is in one district where a large Head Start program is operated by the district for three- and four-year-old children. The percentages for kindergarten suggest fairly uniform practice in the enrollment of the prospective population.

A detailed distribution of enrollments in special programs is shown in table 12. Again, enrollments are expressed as percents of the total base enrollment in grades one through twelve. Also, this table shows the estimates of additional numbers of pupils qualified but not enrolled in the respective programs.

Superintendents were asked to furnish an estimate of the number of pupils who are qualified but not enrolled in the special programs. The numbers of qualified pupils plus actual enrollments give an adjusted estimate of the total need for special programs. The cities have a higher proportion of pupils in special programs for the mentally and physically handicapped persons and for the socially maladjusted, but not in compensatory and vocational programs. Three districts with large Indian population have the highest estimated percentage of pupils in need of compensatory and vocational programs. The magnitude of these percentages is not due entirely to presence of the Indians. These districts have a large proportion of other pupils likewise in need of these programs. Observations of the field workers indicate that the figures from these three districts may

Table 12. Distribution of Pupils in Special Programs: Actual Enrollment Plus Number Qualified but not Enrolled — 1968–69

Program	Pupils Expressed as a Percentage of Total Gross Enrollment in Grades 1–12				
			Independents		
	Cities 12 Districts	*Suburbs 8 Districts*	*All 8 Districts*	*Indian* 3 Districts*	*Others 5 Districts*
(1)	(2)	(3)	(4)	(5)	(6)
Mentally and Physically Handicapped, Grades 1–12:					
Actual	2.5%	1.2%	1.2%	0.7%	1.5%
Qualified but not Enrolled	0.7	0.7	0.6	1.5	0.4
Subtotal	3.2	1.9	1.8	2.2	1.9
Socially Maladjusted, Grades 1–12:					
Actual	0.7	0.3	0.0	0.0	0.0
Qualified but not Enrolled	1.1	1.3	(†)	(†)	(†)
Subtotal	1.8	1.6	0.0	0.0	0.0
Remedial and Compensatory, Grades 1–12:					
Actual	3.0	2.6	8.0	10.7	6.7
Qualified but not Enrolled	9.1	0.4	6.5	15.7	1.9
Subtotal	12.1	3.0	14.5	26.4	7.6

* Three independent districts with 30 to 70 percent Indian pupils.

† No estimates provided.

Table 12. DISTRIBUTION OF PUPILS IN SPECIAL PROGRAMS: ACTUAL ENROLLMENT PLUS NUMBER QUALIFIED BUT NOT ENROLLED — 1968–69 Continued

Program (1)	*Pupils Expressed as a Percentage of Total Gross Enrollment in Grades 1–12*				
	Cities 12 Districts (2)	*Suburbs 8 Districts* (3)	*Independents*		
			All 8 Districts (4)	*Indian* 3 Districts* (5)	*Others 5 Districts* (6)
Vocational-Technical, Grades 7–12:					
Actual	3.5	1.7	5.0	7.4	3.4
Qualified but not Enrolled	3.5	1.4	4.4	4.4	0.0
Subtotal	7.0	3.1	9.4	11.8	3.4
All Special Programs, Grades 1–12:					
Actual	9.7	5.8	14.2	18.8	11.6
Qualified but not Enrolled	14.4	3.8	11.5	21.6	2.3
Subtotal	24.1	9.6	25.7	40.4	13.9

* Three independent districts with 30 to 70 percent Indian pupils.

be typical of most schools that were visited on the Indian reservations for which cost data are not available.

Pupil-Staff Ratios

Numerical ratios of pupils to staff are significant, particularly when considered in relation to other characteristics associated with the utilization of resources for educational programs. Table 13 shows average ratios of pupils to all academic staff members ranging from 17.9 to 22.0. Expressed another way this range would be from 45.4 to 55.9 staff members per 1,000 pupils.

In recent years one of the leading spokesmen for education, Dr. James B. Conant, has advocated a minimum of 50 staff members per 1,000 pupils. Many studies over the past quarter of a century have corroborated the findings of the pioneering work of the late professor Paul Mort. According to him, districts with the most favorable circumstances had from 60 to 65 staff per 1,000 pupils. The average pupil-staff ratios in the districts of this study fall below the quality levels that have been recommended by professional leaders for years. There are only a few exceptions among individual districts to this study.

The average pupil-teacher ratios by groups of districts show wide variations. In the basic programs the range of the gross ratio is from 19.1 to 25.2 pupils per teacher. Again the cities have the largest number of pupils per teacher. The cities have the largest pupil-teacher ratios in all basic programs at all grade levels except grades ten through twelve in five independent districts. The cities have the largest ratios in special programs for mentally and physically handicapped pupils and for those socially maladjusted. The suburbs have the lowest average pupil-teacher ratio for compensatory programs. The highest ratios in remedial and compensatory programs are in the independents. The highest ratios in vocational education are in the independent districts with large Indian population. The cities are the second highest. Vocational programs as well as the compensatory ones have a great range in substantive character which contributes to variation in these ratios among all districts regardless of classification.

Table 13. RATIOS OF PUPILS TO ACADEMIC STAFF — 1968–69

Program	*Cities 12 Districts*	*Suburbs 8 Districts*	*Independents*		
			All 8 Districts	*Indian* 3 Districts*	*Other Independents 5 Districts*
(1)	(2)	(3)	(4)	(5)	(6)
1. Average Gross Number Pupils per Academic† Staff Member:	22.0	18.5	19.7	17.9	20.7
2. Average Number Pupils per Teacher in Basic Programs	25.2	21.9	21.8	19.1	23.4
Prekindergarten	50.1	24.7	16.3	0.0	16.3
Kindergarten	47.3	45.1	46.7	46.9	46.6
Grades 1–6	26.9	24.2	22.3	21.0	23.1
Grades 7–9	23.8	19.3	20.5	17.4	22.4
Grades 10–12	19.9	18.5	18.2	12.9	21.3
3. Average Number Pupils per Teacher in Special Programs:					
Mentally and Physically Handicapped	12.8	9.3	10.1	6.6	12.3
Emotionally and Socially Maladjusted	19.3	14.7	....**	....**	....**
Remedial and Compensatory	24.6	17.2	51.5	71.0	41.8
Vocational Education	50.2	41.4	43.1	67.3	27.0

* Districts with 30 to 70 percent Indian pupils.

† All teaching and nonteaching academic staff.

** No programs reported.

Pupil Cost Ratios

Unit costs represent the most important basis for analysis of expenditures on any classification of programs. In this analysis full-time equivalent pupil enrollment is the unit of cost.

Several variables enter into the average current operating expenditure per pupil in a given program. The chief ones are as follows: (1) proportion of the students' time devoted to the program, (2) the number of pupils that the teacher can work with effectively, (3) the extent of nonteaching backup staff time required to assist the teacher, (4) salary level, and (5) other expenses for instructional materials, operation, and maintenance of auxiliary services.

The average expenditures per pupil for respective programs by grade level are shown in table 14. These figures are the means of district averages. The figures have been adjusted to a school year of 180 days which is the most common in this sample. The average amount per pupil in each program is computed by dividing the number of full-time equivalent pupils in the program into the total current expenditures allocated to the program.

After netting out the number of pupils and expenditures in the special programs the remainder constitutes the basic programs in grades one through twelve.

The average per pupil expenditures are then converted into ratios, using the average expenditure per pupil in grades one through twelve in the basic programs as the base 1.0. These ratios are shown in table 15. These ratios show wide variations in the costs of special programs that the school districts offer in their effort to meet the needs of all individuals. For example, in the cities the highest cost ratio is 2.615 for socially maladjusted pupils in grades one through six.

After removing the special programs the average per pupil expenditure in the basic programs increases with grade level. The amount per pupil in basic programs in grades one through six ranges from .885 of the base in the cities to .910 in the suburbs. The average in grades seven through nine in relation to the base is 1.042 in the cities, 1.069 in the suburbs, and 1.023 in the independents. The respective ratios for grades 10–12 are 1.280, 1.109, and 1.310.

The differences by grade level would be more pronounced if the cost per pupil in grades 1-6 were used as the base 1.0. Hence table 16

Table 14. MEAN* EXPENDITURE PER PUPIL BY PROGRAM AND GRADE LEVEL — 1968–69

Program (1)	*Cities 12 Districts* (2)	*Suburbs 8 Districts* (3)	*Independent 8 Districts* (4)
1. Basic Program			
Grades 1–12	$ 714	$1,065	$ 787
Grades 1–6	632	969	709
Grades 7–9	744	1,138	805
Grades 10–12	914	1,181	1,031
2. Mentally and Physically Handicapped			
Grades 1–12	1,450	2,022	1,763
Grades 1–6	1,515	2,360	2,000
Grades 7–9	1,326	1,820	1,498
Grades 10–12	1,403	1,698	1,497
3. Socially Maladjusted			
Grades 1–12	1,752	1,851	0
Grades 1–6	1,867	2,422	0
Grades 7–9	1,820	1,326	0
Grades 10–12	1,537	1,518	0
4. Remedial and Compensatory			
Grades 1–12	1,265	1,781	1,403
Grades 1–6	1,141	1,649	1,669
Grades 7–9	1,858	1,934	1,529
Grades 10–12	1,086	1,901	1,146
5. Vocational–Technical†			
Grades 7–12	1,210	1,628	1,263
Grades 7–9	1,088	0	1,610
Grades 10–12	1,198	1,628	1,275
6. Prekindergarten	716	1,015	1,063
7. Kindergarten	820	1,076	850

* Mean expenditures adjusted to 180 day school year and 19.3 percent retirement payments added to all academic salary payments. This figure, 19.3 percent, is the average retirement payment of New York City, Elmira, and Endicott. Expenditures are based on full-time equivalent (FTE) pupils and not numbers enrolled. Prekindergarten and kindergarten are for full day (single session) programs.

† Average enrollment = 0.45 FTE in the Vocational Program and 0.55 in the Basic Program.

Table 15. Ratios of Mean* Current Operating Expenditures per Pupil by Program and Grade Level to Mean Expenditure per Pupil in Basic Programs, Grades One Through Twelve — 1968–69

Program (1)	*Cities 12 Districts* (2)	*Suburbs 8 Districts* (3)	*Independents 8 Districts* (4)
1. Basic Program			
Grades 1–12	1.000	1.000	1.000
Grades 1–6	.885	.910	.901
Grades 7–9	1.042	1.069	1.023
Grades 10–12	1.280	1.109	1.310
2. Mentally and Physically Handicapped			
Grades 1–12	2.031	1.899	2.240
Grades 1–6	2.122	2.216	2.541
Grades 7–9	1.857	1.709	1.903
Grades 10–12	1.965	1.594	1.902
3. Socially Maladjusted			
Grades 1–12	2.454	1.738	.000
Grades 1–6	2.615	2.274	.000
Grades 7–9	2.549	1.245	.000
Grades 10–12	2.153	1.425	.000
4. Remedial and Compensatory			
Grades 1–12	1.772	1.672	1.783
Grades 1–6	1.598	1.548	2.120
Grades 7–9	2.602	1.816	1.943
Grades 10–12	1.521	1.785	1.457
5. Vocational–Technical†			
Grades 7–12	1.695	1.530	1.605
Grades 7–9	1.512	.000	2.046
Grades 10–12	1.678	1.530	1.620
6. Prekindergarten	1.003	.953	1.351
7. Kindergarten	1.158	1.010	1.080

* Mean ratios calculated from districts reporting respective programs. The ratios are based on estimated full-time–equivalent pupils in each program. Prekindergarten and kindergarten are estimated on the basis of one group of pupils each day per teacher.

† Average enrollment = 0.45 FTE in the Vocational Program and 0.55 FTE in the Basic Program.

Table 16. RATIOS OF MEAN* CURRENT OPERATING EXPENDITURES PER PUPIL BY PROGRAM AND GRADE LEVEL TO MEAN EXPENDITURE PER PUPIL IN BASIC PROGRAMS, GRADES ONE THROUGH SIX — 1968–69

Program (1)	*Cities 12 Districts* (2)	*Suburbs 8 Districts* (3)	*Independents 8 Districts* (4)
1. Basic Program			
Grades 1–6	1.000	1.000	1.000
Grades 7–9	1.177	1.174	1.135
Grades 10–12	1.446	1.219	1.454
2. Mentally and Physically Handicapped			
Grades 1–6	2.397	2.436	2.821
Grades 7–9	2.098	1.878	2.113
Grades 10–12	2.220	1.752	2.111
3. Socially Maladjusted			
Grades 1–6	2.954	2.499	.000
Grades 7–9	2.880	1.368	.000
Grades 10–12	2.432	1.567	.000
4. Remedial and Compensatory			
Grades 1–6	1.805	1.702	2.354
Grades 7–9	2.940	1.996	2.157
Grades 10–12	1.718	1.962	1.616
5. Vocational–Technical			
Grades 7–12	1.915	1.680	1.781
6. Prekindergarten	1.133	1.047	1.499
7. Kindergarten	1.298	1.110	1.199

* Mean expenditures calculated from districts reporting respective programs. Ratios are interpreted as in table 15.

shows these cost ratios to this base. For example, in the cities the average expenditure per pupil in grades seven through nine is 1.177 times the average for grades one through six. In grades ten through twelve, the average expenditure per pupil in the basic programs is 1.446 times the average in grades one through six. Other programs can be interpreted similarly.

The pattern of higher cost by grade level is one of long standing. Programs have been more specialized with higher grade levels, resulting in larger numbers of staff members for the same number of pupils. Instructional materials and noninstructional services are more expensive in the secondary grades than in the elementary grades.

There has been a persistent question for many years as to whether the norms of practice reflect the true amounts that should be spent to meet the needs of pupils at the respective grade levels as well as in the special programs. The ratios shown here for only one year cannot be accepted as fixed over a number of years. Assuming that procedures for allocation could be standardized reasonably well, the ratios could be calculated annually. Fluctuations from one year to the next would result from a number of variables which could be explained. The principal ones would be changes in salaries of staff, scale of operation as reflected partly in pupil-teacher ratio, and the extent of full development of the program with the necessary supportive services.

Observations in this study suggest that cost differentials by grade levels will become increasingly difficult to obtain in the future. Educational programs will be more flexible and grade structure will be less rigid than in the past. In this study, it is necessary to make an estimated proration of some pupils in nongraded programs according to grade level. Thus, the most stable ratios are the averages for grades one through twelve.

The data of individual districts have been examined to ascertain if the cost ratios show a correlation with the base expenditure per pupil in grades one through twelve. Are the cost ratios for each program fairly constant at all expenditure levels? An analysis of the distributions in this sample shows that the variations among districts are as wide among those on the same expenditure level (per pupil in basic programs, grades one through twelve) as among those on different levels.

The greatest differences in ratios are related to the nature of the program. For example, in the category of emotional and social maladjustment, resident detention schools for predelinquents and delinquents cost from three to five times the amount per pupil in the basic programs. Pupils confined to hospitals or to their homes for extended illness may cost only slightly less. On the other hand, in this same category large numbers of pupils may be receiving intensive psychological counseling and tutoring at only 25 percent greater cost than those in the basic programs. Thus, this category may need redefining to reclassify pupils with more homogeneous costs.

The category of programs for remedial and compensatory assistance is another example of widely variable practice. Some districts spread their resources thinly to accommodate as many pupils as possible, whereas others concentrate in greater depth with fewer pupils. Thus, some of the variation in costs can be attributed to lack of precision in the methods for counting services in comparable pupil equivalencies.

Summary of Pupil Cost Ratios

There are several factors that underlie the cost differentials shown previously in table 15:

1. There is much consistency among school districts in basic educational programs, resulting from staffing practice and other characteristics of the programs.
2. The average expenditure per pupil in programs for the mentally and physically handicapped is fairly stable when measured over all grades one through twelve. This stability is also reflected in the patterns of class organization and instructional practice. Many of these programs segregate the pupils from others in the school for most of their activities and experiences. Some schools are beginning to integrate the pupils in some activities where they can function with the more "normal" pupils. Even where they are kept in special groups they are brought into the mainstream of some activities so they may feel a part of the total school. There are not enough data in the districts of this sample to indicate whether such changes will affect the cost ratios for these programs. Teachers do not think costs will be affected because of the need for close surveillance by special teachers.
3. Programs for the socially maladjusted pupils are not operated in the districts that are classified as independents. They have no basis of diagnosis on which to estimate the number of qualified pupils for such programs. Yet, teachers and other school officials state that there is a substantial need for at least intensive therapy and counseling, if not special classes, for some pupils.

The field workers of this study find a general reluctance of the schools to classify pupils as "socially maladjusted." This is based on the resistance of parents to have their children tagged with labels that they perceive as uncomplimentary or a "problem" nature. Many parents resist until they are confronted with the reality of a problem which demands treatment. For example, many children might be spared emotional illness if they were treated in the incipient stages.

4. Most of the remedial and compensatory programs are supported from special federal aids. The low cost ratios of these programs in the independent districts are influenced by the high proportions of pupils in these programs in four of the eight districts. These districts have high proportions, particularly among Indians, Spanish-Americans, and Mexican-Americans, with special need for bilingual instruction.

5. The costs of vocational-technical programs per full-time equivalent pupil unit are 1.530 times the average amount per FTE pupil in grades one through twelve in the suburbs, 1.605 in the independents, and 1.695 in the cities. The independent districts with large proportions of Indians have high proportions of the student population that are enrolled in vocational education. These districts are in communities with little opportunity for work-study programs, either for the Indians or the non-Indians. These schools have greater than average need to enrich their programs with additional facilities, guidance, and instruction to overcome the partial occupational vacuum of the community.

6. The costs of prekindergarten programs are slightly higher per pupil than the average for basic programs in grades one through twelve in the cities and the independents, but not in the suburbs. The range of ratios in relation to the average cost per pupil in basic programs of grades one through twelve is 1.003 in the cities, .953 in the suburbs, and 1.351 in the independents. These ratios reflect programs where the teacher has one group of pupils instead of two as in most kindergartens. Also, most of the teachers in the prekindergarten programs have an aide. Some of these programs receive additional assistance in kind from outside agencies such as the Office of Economic Opportunity and universities. Financial data for these outside services are not available. Since most of these programs are experimental and not fully developed these ratios are low.

7. The costs per pupil in kindergarten in relation to average amount

per pupil in grades one through twelve basic programs are respectively: cities, 1.158; suburbs, 1.010; and independents, 1.080.

These ratios are for kindergartens on single- instead of the double-sessions in actual practice. The typical program consists of a teacher with an aide and twenty to twenty-five pupils in each of two sessions, resulting in half the cost per pupil as shown here on an FTE (single session) basis.

Elsewhere in this report the need for revising the kindergarten program into a single session of suitable length for children of this age is discussed. The impact of this change on cost is treated in the section on projections of costs.

Allocations of Current Expenditures by Programs

Another way of analyzing current expenditures of school districts is by proportionate amounts of the budget spent on respective programs. Strictly speaking, expenditures are not allocated on this basis. They are residually determined from decisions on the nature of programs and the character of inputs.

Administrators do not approach the process of budget-making with a formal procedure of program analysis, although there is an increasing orientation in this direction. The whole idea of program-planning-budgeting systems (PPBS) is to provide a method for translating information on educational outcomes to cost ledgers on a program basis. Presumably, if educational results of programs can be evaluated dependably, explicit decisions on relative allocations can be made with a greater degree of confidence than at present.

Table 17 shows the percentage distributions of all current expenditures by program categories in 1968–69 for the sample of districts in this study. For example, in the cities 9.7 percent of the total operating budget is spent on the four designated special programs, 4.1 percent on early childhood education, and 86.2 percent on basic programs. Averages for the other districts are interpreted in similar manner.

Some of the figures are striking. For example, there is only a nominal percentage of the budget spent on prekindergarten education. The cities spend significantly more on special programs than the suburbs and the districts with large proportions of Indians, but about the same as the other independent districts.

Table 17. AVERAGE PERCENT OF TOTAL CURRENT EXPENDITURES OF DISTRICTS ALLOCATED TO RESPECTIVE PROGRAMS — 1968–69

	Cities *12 Districts*	*Suburbs* *8 Districts*	*Independents*		
			All *8 Districts*	*Indian** *3 Districts*	*Others* *5 Districts*
Total Current Expenditure	100.0%	100.0%	100.0%	100.0%	100.0%
Special Programs					
Percent Allocated to Mentally and Physically Handicapped	4.9	2.0	2.4	2.1	2.6
Percent Allocated to Socially Maladjusted	1.0	0.4	....	....	....
Percent Allocated to Remedial and Compensatory	2.1	2.5	3.0	2.5	3.3
Percent Allocated to Vocational–Technical	1.7	1.1	3.0	2.0	3.6
Percent Allocated to All Special Programs	9.7	6.0	8.4	6.6	9.5
Early Childhood					
Percent Allocated to Kindergarten	3.8	3.4	4.1	4.5	3.9
Percent Allocated to Prekindergarten	0.3	1.3	0.3	....	0.3
Percent Allocated to All Early Childhood	4.1	4.7	4.4	4.5	4.2
Percent Allocated to Basic Programs, Grades 1–12	86.2	89.3	87.2	88.9	86.3

* Three independent districts with 30 to 70 percent Indian pupils.

The distributions of current expenditures shown in table 17 can be used as a basis for estimating the need for allocations to accommodate the potential enrollments as shown in table 12. For example, the three districts with Indian students spend 6.6 percent (table 17) of their budgets on 18.8 percent (table 12) of their pupils who are in special programs. A proportionate expenditure to accommodate an estimated 40.4 percent of pupil enrollments in special programs would be 14.2 percent of the budget.

Summary of Allocations

These estimates show that the respective allocative needs of school districts in this study for special programs as percentages of the total current operating budget are as follows: cities — 24.1 percent; suburbs — 10.0 percent; independents without Indians — 11.4 percent; independents with Indians — 14.2 percent.

There are some extensive observations on other special types of districts for which data are not available for direct estimates of needs for these special programs. The schools on the Indian reservations included in this study are estimated to have about the same percentage of need for special programs as the cities. From extensive observations in recent years, the authors estimate that regions such as Appalachia and many isolated rural areas with small villages likewise have about the same percentage of need for these special programs as the cities. However, in these comparisons of relative costs it is not assumed that the composition of special programs would be similar among communities.

Distribution of Current Expenditures by Present Budget Categories

An understanding of the present budget categories is important in the considerations of potential changes in the structuring of educational costs. Table 18 shows the percentage distributions of these categories for twenty-eight districts participating in this study.

The most significant items to note are the salaries for the academic staff, with means ranging from 64 to 72.2 percent of the total budget. Added to these are from 3.8 to 8.7 percent for salaries for nonacademic staff, including clerks, secretaries, and other teacher aides. These percentages indicate the significance of such statistics as pupil-teacher ratios, average salaries, and proportion of supportive staff to teachers.

Table 18. DISTRIBUTION OF SCHOOL DISTRICT EXPENDITURES BY BUDGET CATEGORY — 1968–69

Districts (1)	Proportion of Current Operating Expenses by Budget Category									
	Total Salaries Academic Staff (2)	*Administration and General Control* (3)	*Total Salaries Nonacademics for Instruction* (4)	*Instructional Supplies and Equipment* (5)	*Operation and Maintenance of Plant* (6)	*Transportation* (7)	*Auxiliary Services* (8)	*Fixed Charges* (9)	*Community Services* (10)	*Total Operating Expense* (11)
Cities: 12 Districts										
Average............	72.2%	3.3%	3.8%	3.1%	10.0%	1.0%	3.0%	2.9%	0.7%	100%
Range..............	64–81	0.4–5	1–8	1–5	7–15	0.3–2	0.3–7	0.5–4	0–2	
Suburbs: 8 Districts										
Average............	70.9	1.8	4.8	4.2	10.9	1.4	1.3	3.4	1.3	100
Range..............	65–78	0.2–3	3–7	2–6	5–16	0.2–2	0–7	0.7–6	0.2–2	
Independents: 8 Districts										
Average............	68.5	1.8	5.8	5.0	9.1	3.2	2.2	4.0	0.4	100
Range..............	61–72	0.4–3	2–16	4–8	4–13	2–5	0–6	0.4–7	0–2	
Indians*: 3 Districts										
Average............	64.0	1.8	8.7	5.5	9.8	4.9	1.3	4.0	0	100
Range..............	61–67	0.4–3	3–16	4–8	8–13	4–5	0–2	0.4–7	0	
Others: 5 Districts										
Average............	71.2	1.8	4.0	4.7	8.7	2.2	2.7	4.0	0.7	100
Range..............	64–79	0.6–3	2–6	4–5	4–12	2–3	0.1–6	2–5	0.1–2	

* Districts with enrollments of Indian pupils ranging from 30 to 70 percent.

The proportions devoted to instructional supplies and equipment are low. They vary from 1.0 to 5.0 percent among cities, 2.0 to 6.0 among suburbs, and 4.0 to 8.0 among the independents. These figures raise questions about needs which are easy to identify in field observations.

The variations in the proportions spent on the operation and maintenance of school plants raise implications worth noting. Some districts neglect the upkeep of physical facilities when faced with emergencies and financial crises.

SUMMER SCHOOL

The summer school programs are analyzed by the same procedures as the regular day schools. The purpose is to examine the relative emphases in programs and to ascertain any trend toward significant expansion.

According to educational leaders there is no perceptible trend to indicate that the summer school soon will become an extension of the school year for a majority of pupils. A few communities are having a slow but steady increase in enrollments from year to year. In others, enrollments fluctuate and show no long-term increase.

Yet, enrollments are fairly impressive. Table 19 shows the magnitude of enrollments as percentages of those in the regular school year. Most of them are in the basic programs. As of 1969, the independents enroll 21 percent of the number in grades one through twelve of the regular year. The cities have the lowest percent of 17.7.

Small numbers are enrolled in kindergarten, ranging from 0.7 percent of grades one through twelve in the cities to none in the independents.

The special programs are generally low in enrollments with a few exceptions. All districts have a larger number of pupils in programs for remedial and compensatory instruction.

Interviews confirmed that many students counted in the basic programs are repeating courses where they failed during the regular year, thus in effect receiving compensatory instruction.

Many students in the basic programs are taking work to enrich the breadth of their education. A few are accelerating their work for early graduation.

Table 19. Mean* Percent of Total Regular School Year Enrollments in Grades One Through Twelve Attending Summer School — 1969

Program (1)	*Cities 12 Districts* (2)	*Suburbs 8 Districts* (3)	*Independents 8 Districts* (4)
1. Basic Programs, Grades 1–12	17.7%	18.2%	21.0%
2. Kindergarten	0.7	0.5	0.0
3. Special Programs: Total	2.0	4.8	10.0
Mentally and Physically Handicapped	0.3	0.2	0.6
Socially Maladjusted	0.1	0.0	1.2
Remedial and Compensatory	1.0	4.0	5.6
Vocational–Technical	0.6	0.6	2.6

* Mean percent calculated from districts reporting respective summer school programs.

Other dimensions of summer school are length of term and expenditures. All districts except two have a thirty-day term. The remaining two have twenty-five days. In these instances, the school day is longer than the others, thus having about the same net time. Students vary in the amount of work. Some take two courses and others one.

The mean expenditure per pupil is shown in table 20. These figures indicate that the magnitude of the summer financial operation is roughly comparable to two weeks of the regular school year.

Part-Time Programs for Adults and School Dropouts. The purpose

Table 20. Mean Expenditure per Pupil by Program and Grade Level — Summer School 1969

Program (1)	*Cities 12 Districts* (2)	*Suburbs 8 Districts* (3)	*Independents 8 Districts* (4)
1. Basic Programs, Grades 1–12	$37	$47	$32
2. Kindergarten	63	79	23
3. Special Programs			
Mentally and Physically Handicapped	97	43	58
Socially Maladjusted	99	0	126
Remedial and Compensatory	86	52	36
Vocational–Technical (Grades 7–12)	41	22	18

Table 21. PART-TIME PROGRAMS FOR ADULTS AND SCHOOL DROPOUTS — 1968–69

	Cities *9 Districts*	*Suburbs* *6 Districts*	*Independents* *5 Districts*
1. Average Percent which Adult FTE* Enrollment is of Total Enrollment in Regular Day School Programs, Grades 1–12	3.1%	4.7%	3.0%
2. Average Percent of Total Current Operating Expenditures Allocated to Programs for Adults and Dropouts	1.2	1.2	1.1
3. Distribution of Adult FTE Enrollment by Grade Level:			
Elementary Level	7.8	3.4	5.6
Secondary Level	16.0	21.1	12.2
Post-Secondary Level	76.2	75.5	82.2
4. Average Expenditure per Student (FTE)	$305	$209	$290

* Full-time equivalent pupil.

of getting a few statistics on these programs is to relate the magnitude of enrollments and expenditures to the regular day-school year. Table 21 summarizes these data.

These programs represent a relatively small scale of operation. Field observers are informed that very few of the enrollees are recent dropouts. Most of them are adults. In some cases districts have difficulty classifying work as vocational. Much of it is crafts and practical arts. In the cities a substantial portion is academic work in such fields as language arts and social sciences. There is very little vocational education in these programs. In most instances this work is being taken in junior colleges.

While these part-time programs constitute an enrollment population of only 3 to 5 percent of the regular day-school year, they perform a unique service to their clientele. The continuation high school for dropouts is among the most unique ones observed in this study. This is described earlier in chapter 4.

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6 | PROJECTIONS OF NEEDS TO 1980

We have shown that educational activities can be classified into a few broad program categories of functional nature. Students with common characteristics can be diagnosed and organized into appropriate groups for instruction based on sound psychological and pedagogical principles. The costs of resources necessary to operate the respective programs can be identified.

By 1980 methods of diagnosis should be improved for identifying all individuals with special needs. In some areas, such as mental and physical handicaps, diagnostic procedures are reasonably satisfactory for children above age five. In other areas, such as remedial and compensatory instruction, procedures are not fully developed. By 1980 such proxy methods as counting children by family income may be replaced by diagnosis of individuals.

In this study the judgments of informed persons in school systems and in other areas of education have been relied upon to identify and to estimate the unmet needs in the respective programs. Projection thus is a matter of quantifying unmet needs in relation to present practice. The question of development next arises. What is a reasonable period of time to set for objectives? Some may be accomplished in five years, others in a longer period depending upon the allocation of resources and effort. A decade is a reasonable period of time to even out the variable phasing among programs as they progress from initial stages to well-established levels of development. It is assumed that alternative choices may vary the relative emphases on programs as well as the phasing of developments.

The estimates presented here are not absolute and complete. They are more nearly minimums or reasonable bases to develop operating capacities within school districts to cope as effectively as possible with needs on a continuing basis.

Thus, the projections over the decade of the 1970s represent an extension of current additional needs, assuming that additional programs and revisions of existing programs will be established by 1980. The categories of projections follow.

EARLY CHILDHOOD EDUCATION

This is a broad field which includes several specific programs for children under six years of age. No formal educational programs are proposed for children under three years of age other than those to assist parents in working with their children in the home.

Parent Education

Programs of parent education are focused on two groups: those with children not in school, and those whose children are enrolled in school. The unit of cost for the parent programs is one-tenth of the classroom instructional unit for the children.

For example, a minimum classroom unit of a nursery program for three- and four-year-old children would consist of a teacher and a teacher aide for fifteen to twenty children plus one volunteer mother. An adequate unit would consist of a teacher and two aides plus one volunteer mother on a rotating basis. The parents of the children would comprise the parent component for instruction and involvement.

For parents who do not have children in school the unit of measurement for cost of programs is estimated as equivalent to the parent component associated with the instructional unit for children.

Day Care Centers

There are two types of programs for these centers. First, the public schools should operate day care centers in conjunction with educational programs for children of working mothers on low income, and for those on low income with illness and other emergencies where outside care is needed. These centers would be open about 10 hours each day for five days per week to accommodate variable working hours of mothers. They would care for the children about five hours and the school would accommodate them for three hours. Miller estimates that in 1967 "1,050,000 disadvantaged children from birth to six years of age need full day care." [1] This is about 4.49 percent of the total population of this age group. In 1980 this number on a proportional basis will be 1,362,000.

Second, the public schools should operate programs of consulting services to private day care centers for those who choose to participate.

The day care centers are estimated to cost about the same amount per pupil as the instructional program. The consulting services to the private day care centers are estimated at one-tenth the amount per comparable instructional unit in school.

Nursery School Programs for Three- and Four-Year-Olds

Costs are estimated for three alternatives of nursery school programs: low-, medium-, and high-demand. The estimates computed in this study for three-year-olds in 1980 range from a low of 4,261,000 to a high of 5,478,000, based on extrapolations from series I-D and I-B of the Bureau of the Census projections. For purposes of estimation we are assuming an average of 5,004,000. The corresponding estimates of four-year-olds in 1980 are 4,473,000 and 6,034,000. We are assuming an average of 5,254,000 for this age group.

The U. S. Office of Education [4] estimates that about 10 percent of children three through five years of age are from families with less than three thousand dollars per year income. We assume that in 1980 10 percent of these age groups will be in families with incomes under three thousand dollars, or a comparable figure adjusted to 1968 prices. There will then be about 500,000 three-year-olds and 525,000 four-year-olds from low-income families. According to present standards a high proportion of these will be severely disadvantaged.

Table 22 shows the estimates of three- and four-year-old age groups in 1980 and the projected enrollments in nursery school programs. These estimates include 663,000 pupils enrolled in private schools in October 1968. We assume that this number will not increase, but perhaps decrease, during this next decade.

Kindergartens

Most kindergartens in America are in need of reorganization. They should be changed from a double session to a single session per

Table 22. Projected Population and Enrollments for Nursery Schools in the Public Schools: Three- and Four-Year-Olds — 1980

Projection	*Numbers in Thousands*		
Projection (1)	*Three-Year-Olds* (2)	*Four-Year-Olds* (3)	*Total* (4)
1. Population*	5,004	5,254	10,258
(1) Number from families under $3,000†	500	525	1,025
(2) Number from families over $3,000†	4,504	4,729	9,233
2. Low Demand Enrollments	1,376	2,153	3,529**
(1) Families under $3,000†	250	262	512
(2) Families over $3,000†	1,126	1,891	3,017
3. Medium Demand Enrollments	2,000	3,362	5,362**
(1) Families under $3,000†	500	525	1,025
(2) Families over $3,000†	1,500	2,837	4,337
4. High Demand Enrollments	2,626	4,071	6,697**
(1) Families under $3,000†	500	525	1,025
(2) Families over $3,000†	2,126	3,546	5,672

* The mean of Series I-D and I-B projections of the Bureau of the Census. See table 4.

† Estimates based on numbers of children from families reported in 1968.

** Including 663,000 in private schools, the number enrolled in 1968.

day program of three to three and one-half hours. According to a recent survey by the NEA Research Division [3] 87 percent of the school systems surveyed have half-day sessions, with 93.5 percent of all teachers instructing two half-day sessions.

A single session should provide time for instruction and involvement of parents comparable to the programs for prekindergarten children. These changes in the nature of the kindergarten will require substantial increases in resources and costs.

Another need is to make kindergartens available to all five-year-old children by 1980. In October 1968 about 77 percent of all children of this age are reported enrolled in kindergarten or primary school above kindergarten. The number of five-year-olds reported in 1968 is 4,095,000. The average of the estimates for 1980 is 5,962,000. Thus, to maintain enrollments at 77 percent of the estimated five-year-old population in 1980 will require an increase of 1,455,000 in number of pupils. To provide programs for all children of this age will require an increase from 3,145,000 enrollments in 1968 to 5,962,000 in 1980, or 2,817,000 additional enrollments.

Programs for Mentally and Physically Handicapped Pupils

The estimates of needs for pupils in these programs are prepared from data in the districts of this study and not from national statistics. The cities have a higher incidence of need than the other types of districts. Considering actual enrollments, estimates of additional needs by local school officials and an in-depth survey in one large city, the estimated additional need in these districts is equal to the number served in 1968–69.

Most of the children in these programs are in the five through seventeen age group. The total number of individuals in this group is estimated to be about the same in 1980 as in 1970, assuming an average of Series I-D and I-B of the Bureau of the Census. On the other hand, the number of children under five years of age is estimated to increase from 18,826,000 to 24,354,000, or a net gain of 5,528,000 according to the Bureau of the Census. See table 4.

The incidence of disabilities among children under five years of age is not well known due to lack of diagnostic precision and relatively small numbers of children who are diagnosed. Moreover, studies have shown that some children on borderline performance at about age four or five regress to the extent that they need special treatment in these programs. There is no basis in this study for estimating the need for special programs for children under five years of age.

Programs for Socially and Emotionally Maladjusted Pupils

The incidence of enrollments in these programs is the lowest of all the special programs. None of the independent districts reports programs for this category. Four cities and one suburb do not report any. Only three cities and two suburbs estimate any additional pupils that should be classified in this category.

The field interviews reveal evidence that the reported figures do not represent the true need for treatment of pupils in this category. Diagnostic procedures are not established to identify and maintain current rosters of pupils with these difficulties. The numbers of pupils who need very special treatment and care are much larger than the numbers reported. They include those who are emotionally ill, delinquents, unmarried pregnant girls, and borderline cases of severe emotional disturbance. Many of these are dropouts and are not included in the estimates.

There is a strong conviction among educators that many of the basic difficulties implied in this category can be prevented through improvements elsewhere in the educational program. Assuming substantial reduction of difficulties in this area through positive approaches for prevention, the school districts need an estimated increase of twice the present expenditures in this category during the decade of the 1970s.

Remedial and Compensatory Programs for Pupils with Severe Learning Difficulties

These programs include a wide range of instructional and guidance services requiring additional inputs and costs above the basic programs. All districts except two independents and one city report some special programs in this category.

The estimated increases in qualified pupils in need of these services over the numbers enrolled at present as reported are as follows: cities, 300 percent; suburbs, 15 percent; and independents, 85 percent.

Vocational-Technical Programs

These programs are in the secondary grades from seven through twelve. They are defined as programs for which the districts are entitled to federal vocational funds. Under this definition the districts report estimates of total need as approximately double the present enrollments. Like the estimates of needs in other special programs these are too low.

The field observations suggest that if the vocational programs are revamped for grades seven through twelve, as they should be, the number of students enrolled in them will be more than three times the present enrollment. The estimated need during the 1970s is an increase of three times the present enrollments. Translated into the base population of enrollments in grades seven through twelve, the true needs are more nearly like 40 percent in the cities, 20 percent in the suburbs, and 40 percent in the independents.

Correction of Imbalance for States Below the National Average Expenditure per Pupil

Another category of national need in public school districts is to raise the average expenditure per pupil in states that are below the national average. The addition of this correction in 1968–69 would reduce the range from $398 to $1159 per pupil in average daily attendance to a range of $702 to $1159.

At 1969 prices, this correction would cost $2,657,508,000, adding 9 percent to the total current expenditures of public schools.

This correction would be an appropriate goal to set over a decade of time to work toward a defensible foundation of support of public schools that is slightly below the average in the cities and nonmetropolitan districts in this study.

Transfer of Some Educational Support from Nonpublic to Public School Systems

The current financial plight of some nonpublic schools in this country is raising alternatives for public assistance. There seem to be three fundamental alternatives as expressed in the literature and by a number of leaders in this study:

1. Transfer pupils from the jurisdiction of the nonpublic to the public schools
2. Organize shared programs between public and nonpublic school systems with corresponding division of jurisdiction and financial support
3. Retain programs and total jurisdiction in the nonpublic schools, with legal provision for some public financial support

This subject has been beyond the scope of this study. Hence, no estimates are prepared on possible transfers in costs from nonpublic to public school systems.

Needs of Basic Programs

The needs for general improvement of basic educational programs in the districts of this study are ubiquitous. They include raising the quality of many staff members, increasing the number of staff members in overcrowded schools, replacing worn-out and obsolescent buildings, and renewing the supply of instructional materials. These adjustments would require at least 10 percent increase in the current expenditures.

Counteraction of Professional Obsolescence

The time has come to add to educational budgets a program component for professional obsolescence. Knowledge and skills require constant revision and updating. These require a continuing education. Teachers cannot keep abreast of the professional demands upon them solely by reading journals casually and attending two or three conferences a year. They need larger investments of time and intellectual effort periodically in formal schooling such as workshops, summer schools, and leaves of absence for a semester or a year of study.

Leading universities have long recognized the value of this phenomenon with sabbatical leaves of absence for tenured academic staff members. The most common practice is one semester's leave each six years with full salary. At this rate the additional cost is 8.3 percent of academic salaries. Since these salaries in the public schools amount to about 70 percent of the current expense budget, this practice would add 5.8 percent to the budget. Such a program would require an additional amount of about 1.2 percent for expenses such as travel, school tuition, and others that are incident to a leave for professional study. The total program would not exceed 7 percent of the operating budget.

Such a program at this level of operation would be a reasonable minimum for public school districts to develop within the next decade. The pattern of operation might differ from the one in higher education, yet the major benefits might be applicable after four or five years of service. This would limit the program primarily to career staff members. In this case, the maximum figure of 7 percent would be reduced to about 4 percent of the district's budget because of the heavy attrition of teachers during the first five years of experience.

Teacher Education

Teachers and other educators in this study stressed the need for revision in programs in colleges and universities for the education of teachers. A similar expression is found in the literature. This need is too broad for estimation of any possible increase in cost over the present programs observed in this study. However, there are some observations of experiments with student interns that may offer promising alternatives with cost implications.

Capital Outlay

This study is not designed to make a detailed estimate of costs of capital and instructional materials. The study has included these facilities only to identify the unique characteristics of them that seem to be crucial to effective innovation and necessary for the operation of programs that come close to demonstrating what schools can do.

There are about a dozen schools in new buildings that were designed for something different from the past. They come close to providing the physical environment for expression of the best human experiences. They can be safely labeled as the schools of the 1980s.

In terms of 1969 prices these school plants cost about four thousand dollars per pupil, with some exception in high cost areas. This includes land, buildings, basic furnishings, and capital instructional facilities. This does not include small item instructional supplies of annual consumable nature which are considered a part of the current operating expenses. This capital cost is for initial purchases. It does not include interest charges for financing through bonded indebtedness. These charges may vary from 50 to 100 percent of the initial cost depending on the amount funded through borrowing, interest rates, and number of years for amortization.

About 80 percent of this cost has an effective depreciation of forty years. About 10 percent has a period of twenty years, and another 10 percent has ten years. Thus, the annual depreciation cost is about $140 per pupil per year at 1969 prices. This figure is 16.4 percent of the average current expenditure per pupil in grades one through twelve in the basic programs in this sample of districts.

SUMMARY OF PROJECTIONS

The educational needs identified in this study are translated into minimum financial estimates by program categories. The amount for each program is shown as the percent of the national current operating expenditure of $29,039,741,000, excluding junior colleges under jurisdiction of school districts [2] in 1968–69. The sum of the percentages is the total estimated increase in operating expenses needed by 1980, excluding increases for inflation and absolute improvements in salaries of personnel. These estimates are based on average expenditures and the needs identified in twenty-eight districts in this study. The estimates are as follows:

	Estimated Increase in Percent of National Current Expenditures
I. Parent Education	
A. For children under three years of age, parents of 3,000,000 children — $270 million. (Between one-fourth and one-third of all mothers with children under three years.)	0.93%
B. For children three to four years of age, estimates are included as built-in components in the three alternative programs.	
II. Day Care Centers	
Target population: 4.49 percent of estimated population under six years of age in 1980 = 1,362,000.	
A. Public school programs: 681,000 pupils @ $900 = $612.9 million	2.11
B. Public school assistance to private centers: 681,000 pupils @ $90 = $61.3 million	0.21
III. Nursery School: Three- and Four-year-olds	
A. Low demand: 2,866,000 pupils @ $900 = $2.579 billion less present expenditure of $0.145 billion = $2.434 billion increase	8.38
B. Medium demand: 4,699,000 pupils @ $900 = $4.229 billion less $0.145 billion = $4.084 billion increase	14.06
C. High demand: 6,034,000 pupils @ $900 = $5.431 billion less $0.145 billion = $5.216 billion increase	18.20

			Estimated Increase in Percent of National Current Expenditures
IV.	Kindergarten		
	A. To change present programs from double session to single session day = $1.1035 billion		3.80
	B. To enroll 950,000 five-year-olds not in kindergarten in 1968–69 @ $900 = $855 million		2.94
	C. To enroll all five-year-old population increase from 1968–69 to 1980: 1,867,000 @ $900 = $1.680 billion		5.79
V.	Programs for Mentally and Physically Handicapped Pupils Estimates of increased cost are based on 100 percent increase in enrollments to meet full needs.		
	A. Cities	2.50%	
	B. Suburbs	2.00	
	C. Independents	2.40	
	D. Average for the nation = $669 million		2.30
VI.	Programs for Socially and Emotionally Maladjusted Pupils Estimates of increase for the nation based on twice the percent of the budgets spent in the cities = $581 million		2.00
VII.	Remedial and Compensatory Programs Percentage increases in present enrollments used as the basis for average national increase: cities — 300 percent; suburbs — 15 percent; independents — 85 percent. Total increase = $1.426 billion		4.91
VIII.	Vocational-Technical Programs Budget increase during the 1970s is based on an estimated enrollment increase of three times the number in 1968–69 = $1.742 billion		6.00
IX.	Correction of Imbalance for States below the National Average Expenditure per Pupil Estimated increase to raise thirty-one states below the national mean of $702 per pupil in ADA to this figure = $2.659 billion		9.00

	Estimated Increase in Percent of National Current Expenditures
X. Transfer of Some Educational Support from Nonpublic to Public Schools No estimate	
XI. Basic programs = $2.904 billion	10.00
XII. Counteraction of Professional Obsolescence Estimated cost = $1.162 billion	4.00
XIII. Teacher Education, Research, and Development in Universities No estimate	
XIV. Capital Outlay Annual costs for replacements, excluding interest charges. Annual cost = $4.763 billion	16.40

Totals	*Excluding Capital Outlay*	*Including Capital Outlay*
A. Low demand enrollments for ages three and four	62.37%	78.57%
B. Medium demand enrollments for ages three and four	68.05	84.47
C. High demand enrollments for ages three and four	72.19	88.59

These estimates amount to an absolute increase of 1968–69 current operating expenditures ranging from 62.37 percent to 72.19 percent by 1980. Another increase of 16.4 percent is a minimum for provision of capital facilities. These estimates do not include increases for inflation, the education of teachers, possible transfers of students from nonpublic to public schools, absolute changes in salaries of employees, decline in number of dropouts, extended year or summer school, expansion of programs of adult continuing education, and the full costs of needed capital outlay. Enrollments in the upper secondary grades are expected to increase slightly while those in the middle schools will decline. The net increase above the sixth grade is estimated to be too small to add any substantial cost pressures in general.

An overall basic estimate of expenditures in 1980 can be defined by assuming an annual 3 percent long-term growth rate in the nation's economy. This rate would add 40 percent to the 1968–69 expenditures as well as to the estimated minimum increase of 62.37 percent, giving a total increase of 127 percent.

This still does not take the major item of capital outlay into account. In 1968–69 the total expenditure for capital outlay was $4.461 billion. This was 15.4 percent of current expenditures in that year. In addition $1.104 billion was spent on interest payments on capital bonded debt. This amounted to 3.8 percent of current expenditures. The total of these two figures is 19.2 percent. Thus, the expenditures for capital outlay and debt service in 1968–69 were close to an annual estimated replacement rate. This figure probably would have to be doubled for a decade to catch up with a large backlog of capital needs.

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7 | SUMMARY

INTRODUCTION

Perhaps at no time in the history of this nation have the public schools been subjected to such intensive consideration as today. Criticisms, speculations, and prescriptions are rife. Never have more untested propositions been asserted with greater alacrity.

The role of the schools in society is taken seriously. To some persons these institutions are partly responsible for many social problems. Others see the shortcomings of schools to accomplish for their children what their schools failed to help them achieve. Many citizens are genuinely concerned because they fear uncertain alternatives to public education. They see systems, riddled though they may be with needs, possessing great strength and potential.

No institutions have more open doors to society than the public schools, despite some claims to the contrary. For this reason it is understandable why the schools reflect the concerns, the doubts, the aspirations, and the basic confidence of the nation. Thus, the responses of persons in the sample of school districts in this study mirror the dominant needs and objectives of education.

DIMENSIONS OF NEEDS

All educational considerations are founded on basic human needs that embrace the individual and society. The needs of one are essential to the other. In this study the focus is on the individual without any effort to trace out all the social implications.

Needs of the Individual

The basic needs of the individual may be defined in terms of personal, vocational, and social characteristics for effective satisfaction and performance. The schools are concerned with the total development of the child. His personal qualities include physical and emotional well-being; intellectual growth; a set of values; behavioral qualities of creativity, motivation, and self-control; self-direction; talents and avocational interests; and qualities of adaptability and cooperation. His vocational development involves the learning of essential skills that are required in his chosen occupation. His social development involves the learning of skills in working with others and the exercise of responsibility as a member of various groups in society.

These needs have to be defined in specific terms for all stages of the individual's life. They serve as guides for the educational objectives of every generation.

Needs of the School System

The needs of the school system are defined in terms of educational objectives to meet the needs of individuals. There seems to be a firm national goal in America to provide equal educational opportunity for the development of every individual to the fullest of his capacity and his motivation to help himself.

The public schools have a mandated responsibility to implement this objective. The home, the church, and other institutions have unique responsibilities which cannot be overlooked, though they are not treated in this study.

In this study the needs of the school system are described in operational terms that are formulated within this broad educational objective and the vast body of knowledge about the developmental needs of individuals. The institutional needs may be summarized in three categories: extension of early childhood education, improvements in elementary school education, and improvements in secondary school education.

EARLY CHILDHOOD EDUCATION

Early childhood education includes children below six years of age. There is a wide range of organized activities that are defined as alternative programs which school systems can operate. All of these included in this study are in operation in varying degrees. The kindergarten, primarily for five-year-old children, has a long history, and it is widely disseminated.

Programs for younger children are less widely established, but there has been sufficient experimentation during the last few decades to develop dependable knowledge of what can be done in formal school environmental conditions for children beginning about age three. The knowledge of child development under three years of age is not sufficiently developed to propose formal schooling. Perhaps the next five to ten years may produce enough knowledge for this purpose.

There are five of these programs that should be established and expanded as an integral part of elementary education in public school systems in the 1970s. Before listing these programs a summary of the early childhood school population may be helpful. The Bureau of the Census has two series of population estimates for ages under five, five–seventeen, and under eighteen based on high and low fertility rates. By subtractions the census data give the estimates of five-year-olds. From these estimates and actual data for age groups under five years in 1968, we have prepared estimates for ages under three years, three-year-olds, and four-year-olds. The average estimates for children below three years of age are 10.896 million in 1970 and 14.096 million in 1980. The respective estimates for ages three and four are 7.930 million in 1970 and 10.258 million in 1980. The average estimates for five-year-olds are 4.609 million in 1970 and 5.962 million in 1980. All of these age groups will increase in size. These trends will have an important bearing on needs and demands for educational programs.

The trends of enrollments of these age groups from 1964 to 1968 are important to note in relation to estimated programs for the next decade. The enrollments increased as follows: three-year-olds from 4.3 percent to 8.3 percent; four-year-olds from 14.9 percent to 22.8 percent; five-year-olds from 58.1 percent to 76.8 percent.

Parent Education

Programs of parent education are formally organized activities of instruction and counseling in the home, and occasional meetings with groups. These programs are aimed at instructing the parents in how to direct and guide some special activities of children in their personal development. There are activities for parents of children not in school, and others for those with children in a school program.

This study proposes a minimum development of these programs by the public schools in 1980 to reach the parents of three million children under three years of age. This estimate is for somewhere between one-fourth and one-third of the parents who would not be involved in parent programs in connection with other children in the family who might be enrolled in school. The target population would include parents on welfare, low income, low level of educational attainment, and other indicators of environmental disadvantages for children. Methods of identifying the parents would consist of surveys and diagnostic procedures. The minimum cost of this program at 1969 prices is estimated at 0.93 percent of the total public school budget for current expenses. The amount would be about $270 million.

All other programs have built-in components of parent education for the respective children who are enrolled. These estimates include about one-third of all parents with children under five years of age. It is assumed that all parents of five-year-old children will have access to a parent education program for appropriate participation in the kindergarten.

Day Care Centers

This study proposes that public school systems establish day care centers for a minimum of 681,000 children under six years of age by 1980. An equal number is estimated to be enrolled in private institutions. These programs should be well planned to reinforce the experiences of the children in the educational programs. They are operated by staff with some professional training or under the supervision of persons with this training.

The target population for these centers would primarily include children from low income families whose mothers are away from home during the day for work, illness, and emergencies.

These programs are estimated to cost 2.11 percent of all operating expenses of schools at 1969 prices. The minimum estimate is $612.9 million per year. In addition, the public schools should operate programs of consulting services to private day care centers. These services would be similar to those provided for their own day care centers by the professional staff in the educational programs. The cost of these services is estimated at $61.290 million per year, or 0.21 percent of all public school operating expenses.

Day care centers have special needs including appropriate outdoor and indoor space for meaningful play, recreation, lunch service, and rest. The standards for staffing, activities, and facilities in all centers, public and private, should meet the minimum requirements for programs that are approved for federal aid.

Nursery School: Three- and Four-Year-Olds

Some authorities advocate formal schooling that is suitably organized for children as young as two years of age. Most authorities prefer three years as a minimum age except children with special handicaps. These should be started on an appropriate remedial program as soon as difficulties are identified regardless of age.

There is general agreement among educational leaders in this study and among scholars in the literature that nursery schools for three- and four-year-old children should be established by the public school systems and operated as an integral part of elementary education. To be successful an instructional unit should be staffed with a teacher and two aides for each fifteen to twenty pupils. The school day should consist of about two and one-half to three hours of pupil attendance. Mothers of the children would participate in observation, assist the teacher, confer with the teacher, and become involved in other activities comprising the parent education program as discussed in the preceding section.

An instructional unit requires space of 1,500 to 2,000 square feet for fifteen to twenty children. This amount, if properly planned, provides for organization of about six activity areas for free movement of children and appropriate activities of group and individual nature. The space should be self-contained with toilet, water, storage of clothing, and other facilities. In addition, outside space specially developed for play is essential.

Supportive services for diagnosis, health, food service, and others should be available. Where space can be designed for team effort, one teacher and four aides can manage two groups of not more than twenty pupils each, supplemented by voluntary assistance of mothers.

Teachers should have only one session per day. After children are dismissed the teacher devotes the remainder of the day to two types of activities: planning and supervising the preparation of materials for the next day and conducting the parent education program with mothers of the children.

Three levels of programs are estimated for development in the public schools by 1980: low demand — 2,866,000 pupils; medium demand — 4,699,000 pupils; and high demand — 6,034,000 pupils. These projections are exclusive of about 663,000 pupils estimated to be in nonpublic nursery schools.

The bases for estimating these enrollments are as follows:

1. Low demand includes half of the estimated number of children from families with income under three thousand dollars per year at 1969 prices. The remainder would bring the total enrollment of three-year-olds up to 27.5 percent of the estimated population of this age in 1980. Forty-one percent of the four-year-olds would be enrolled. The respective percents enrolled in 1968 were 8.3 of three-year-olds and 22.8 of four-year-olds.
2. Medium demand includes all children from families with income under three thousand dollars. The remainder would provide total enrollments equal to 40 percent of the three-year-olds and 64 percent of the four-year-olds.
3. High demand includes all children from families with income under three thousand dollars. The remainder would provide total enrollments equal to 52 percent of the three-year-olds and 77 percent of the four-year-olds.

Enrollment of the target population would be based on diagnostic procedures of testing, conferences with parents, and other information on the pupils.

The costs of these three levels of operation would increase the school budgets at 1969 prices by 8.38 percent, 14.06 percent, and 18.20 percent respectively. In dollar amounts they are increases of $2.434 billion, $4.084 billion, and $5.216 billion respectively.

Kindergarten

Leaders in the schools of this study and in the literature strongly urge the reorganization of kindergartens. The first objective should be to abolish double sessions and establish programs consisting of single sessions each day of three to three and one-half hours. Teachers should develop programs of parent involvement similar to the nursery programs, using the remainder of the day for these programs and preparation of materials. Supportive services for pupil diagnosis, health service, food service, and others should be available.

An instructional unit of minimum standards consists of a teacher, two full-time teacher aides, one of whom would be a mother, for twenty to twenty-five pupils. Mothers of the children would assist on a rotating basis. This participation would be part of the parent education program.

The space for each instructional unit should have about 100 square feet per pupil, or a total of 2,000 to 2,500 square feet, exclusive of storage area. The classroom should be organized into about six activity areas with appropriate equipment. The room should be self-contained with toilet, water, storage of clothing, and other facilities. Outside space for play is essential. These children are ready to be introduced to a program of physical education under the direction of teachers with special training in this field. Part of their time would be spent in a gymnasium specially equipped for young children.

These changes would require an increase of $1.103 billion. This sum would increase the cost of kindergarten equal to 3.80 percent of the total current expenditures. The national expenditures for kindergarten in 1968–69 are estimated to be 2.7 percent of current expenditures.

The second objective for kindergartens is to make these programs universally available by 1980. This objective would add 950,000 five-year-olds not enrolled at present plus an estimated 1,867,000 additional children from increased population by 1980.

These changes will require additional space, facilities, and staff. At 1969 prices the total current expenditures would be increased 12.53 percent. The total of these changes amounts to $3.639 billion.

Special Programs for Children under Six Years of Age

In the analyses of program costs in the districts of this study, children under six have not been designated in special programs. We assume that the age distributions in these programs in 1980 will be about the same as in 1970. This may be reasonable since technological devices for individuals with certain difficulties such as impaired hearing and sight may reduce the amount of specialized treatment in small groups. These numbers may be offset by increases to be found in the younger ages as diagnostic procedures are improved.

SPECIAL PROGRAMS

The special programs in this study are classified into four categories: (1) classes for mentally and physically handicapped individuals, (2) remedial instruction and counseling for pupils with severe social and emotional difficulties, (3) remedial instruction and counseling for pupils with other learning difficulties, and (4) vocational education. These categories are used because they identify programs that are in operation to serve pupils with special needs.

Since there are other special studies on these programs they have not been examined in detail in this project. It has been necessary to measure their relative magnitude in terms of enrollments and costs. On these measures they are put into perspective with basic elementary and secondary education programs.

Programs for Mentally and Physically Handicapped Pupils

In recent decades much knowledge of individuals with severe handicaps of all kinds has come from research and experimentation in this field. Leaders in the districts of this study estimate that the number of individuals qualified for enrollment in these programs is about as large as the number presently enrolled. The increase would result from admission of qualified pupils because school systems do not have adequate facilities and resources to accommodate all of them.

These estimates will increase present school expenditures by an estimated 2.30 percent, amounting to $669 million.

Programs for Pupils with Severe Social and Emotional Difficulties

This is an area of great public sensitivity. Nearly half of the districts in this study report only a few, if any, pupils in this category. Some do not have programs other than the regular counseling and psychological services. A few districts operate special schools and programs for pupils who are emotionally ill, for delinquents, and for those with other difficulties. Some pupils with severe maladjustments drop out of school and fail to appear on the roster of this classification.

Among the districts that report data, the officials estimate that the number of students in need of special assistance in this category is about twice the number enrolled at present. Eight of the cities in this study spend 1 percent of the operating budget on these programs. The estimated need is an increase of 2.0 percent of all current expenses, or $581 million.

Remedial and Compensatory Programs

These programs are operated in all districts of this study except one city and two independents (nonmetropolitan). They represent a wide range of additional counseling and instructional services, thus increasing the inputs of staff time above the requirements of most pupils.

These programs operate on the principle of diagnosing the learning difficulties of the individual and providing all known assistance to accomplish as much correction as possible. This approach is more positive and comprehensive than the early concept of remediation. It is a totally adaptive experience rather than a mere additive. For this reason a more appropriate title for these programs may have to be devised in the future.

The districts with large proportions of Indian pupils appear to have the greatest percentage of the school population in need of these programs. The cities have the second highest. The nonmetropolitan areas are next, followed last by the suburban communities.

The average need for all districts is estimated to be 4.91 percent of the present operating budget. This amounts to $1.426 billion.

Eventually, the magnitude of these programs may be reduced by other modifications such as expansion of early childhood programs. The same may be said for the programs for pupils with severe social and emotional difficulties. Thus, the school system must possess flexibility to modify programs as needs of the school population shift.

Vocational-Technical Programs

The definition of federally reimbursable courses used in this study is found to be inadequate either to identify all vocational education or to estimate the needs of the future. The responses of leaders and teachers suggest that the curriculum in vocational education should be revamped. There should be a sequence of prevocational courses beginning in the middle school and culminating in a broad vocational offering in the high school.

The minimum estimates of need during the next decade are increases of three times the present enrollments. These enrollments would amount to an increase of 6.0 percent of present operating expenditures, or $1.742 billion.

BASIC ELEMENTARY EDUCATION

In this study basic elementary education includes everything in grades one through six except the special programs that have just been described. With few exceptions, such as the self-contained classrooms for the mentally and physically exceptional children, the special programs are extensions of basic programs. In some cases they are additional services. In others they are different instructional activities which afford alternative choices to students.

The Needs of Individuals

The needs of individuals in elementary school encompass their total personal and social development from about age six to twelve. The classroom is where diagnosis, activity, and change occur. The needs have to be expressed for every individual. Any description on a group basis loses much of the vital information that the teacher uses in the day to day interaction that is directed toward each individual. The volume of data on individuals is too great for treatment except by groups. Hence, schools describe needs in terms of norms and deviations for general communication to the public.

The period of maturation from early childhood to adolescence is a critical one for every individual. His personality changes from a high degree of plasticity and dependence to one of greater rigidity and independence. These are the years when continuity of growth, motivation, and achievement are so vital to continued development during the succeeding years of adolescence.

Educational Objectives

The universal objective in school districts of this study is to focus all human effort and resources on the fullest development of every individual. This is a general goal that is a dominant theme in the literature. When this purpose is delineated in operational terms the specific objectives include matters like changes in the curriculum, organization of the school, instructional practices, and a host of others.

These objectives cover the total range of educational concerns of elementary education. They indicate the great complexity of education. They also express the urgency for keeping education dynamic and adaptive.

Needs of the Elementary Schools

When objectives are described in operational terms they become synonymous with needs of the system to accomplish given ends. Thus, the needs of the schools are summarized to indicate the changes, the reordering of inputs, and the additional resources that would be made in the next decade if the districts receive adequate funds to spend responsibly. This process of evaluating educational needs provides information for decisions on allocations of funds to education as compared with other social needs.

The goals of the 1970s for improvement of elementary education may be summarized in six major classifications:

1. *Organization.* The elementary school should be organized as an integral unit including all early childhood education and the grades that are commonly called one through five. The sixth grade should be combined with the seventh and eighth for the middle school.

The internal structure of the school should be reorganized with less rigidity in present grade levels to permit continuous progress of individuals, to revise the curriculum, and to change the instructional process.

2. *The Curriculum.* Universal suggestions for curriculum change are the following: (1) revise various areas of content, (2) improve the sequence of learning activities, (3) put more emphasis on the basic cognitive skills, (4) expand instruction for general appreciation and development of talent in the fine arts, (5) expand instruction in the practical arts, (6) expand programs of physical education to improve psychomotor development of pupils, and (7) strengthen instruction for knowledge of occupational fields.

3. *Instructional Strategies.* Changes in instructional procedures rank among the highest in priority of needs. They include the following: (1) modify the self-contained classroom with more team or group teaching, (2) differentiate the instructional activities through use of more specialists and more teacher aides, (3) provide more learning activities with programmed materials, (4) provide more nonsedentary activities for learning in laboratories that afford pupils opportunity to work with animals, plants, and objects of the arts and sciences, (5) provide children with a variety of opportunities to engage in effective dialogue with colleagues and the staff, and (6) provide teachers more time to interact with individuals.

4. *Supportive Services.* Teachers need supportive services from nonteaching specialists such as administrators, counselors, librarians, psychologists, social workers, and research personnel. The districts in this study average one specialist for each seven teachers in all grades from kindergarten through high school. The ratio in a sample of elementary schools in these districts is one for 12.5 teachers. The number of specialists in these schools should be at least comparable to middle schools and high schools.

5. *The Staff.* Schools must be able during the next decade to develop differentiated staffs. Teachers must be assisted in such ways as to free their time as much as possible to utilize their talents most effectively. One assistant teacher for each teacher is the minimum that is recommended in a sample of innovative schools. Nonteaching assistants for supportive services include professional (academic) personnel. In addition, personnel are necessary for such services as maintenance of buildings and equipment, food service, transportation, and health. The school of 1980 will need one staff member per teacher for all supportive services in the elementary schools.

6. *Instructional Materials and Facilities.* Next to personnel, the physical environment is the most crucial factor in need of change. Every school observed in this study with a strong innovative thrust has been able to obtain new buildings and materials that were designed to serve the programs. Buildings have flexibility and a degree of openness for collaboration of staff groups. Space is designed in various clusters with some movable walls rather than the traditional single-room compartmental structure.

Instructional supplies are especially crucial. Schools will consume more supplies than formerly in all areas of instruction. Only a few schools have begun to experience the advantages of the newer instruction media such as computerized instructional units, closed circuit television, video tape recorders, and dial access systems to programmed sources of information.

Image of the 1980 Elementary Schools

The schools that can merge all of these changes into a rational plan of operation will have the best known chance of coping with the needs of all pupils. The school is too complex to make the necessary transformation in bits and pieces. People with ideas and purposes, plans and blueprints for operation, a functional physical environment, and support from the community are the basic components of a hospitable educational environment. This is the image expressed by teachers and other educational leaders in this study. This image is found in the writings of discerning students of education.

The Target Population

The projections of the Bureau of the Census show an increase of about 4.1 million persons in the five to seventeen age group from 1970 to 1980 based on the assumption of high birth rates. Those based on the low birth rates show a decrease of 4.3 million persons in this age group. A median between these two would be a decrease of about 137,000 persons from 1970 to 1980.

The estimates for the ages five years and under show an average of 23.4 million in 1970 and 30.3 million in 1980, or a 29.4 percent increase. Estimates are not available for the ages six to eleven, inclusive. However, the total of this age group will be little if any larger in 1980 than in 1970 due to the low point of birth rate appearing in 1968. The secondary school population, twelve- to seventeen-year-olds, will increase slightly during the 1970s.

BASIC SECONDARY EDUCATION

Secondary education is treated as grades seven, eight, and nine for junior high school and ten, eleven, and twelve for high school because of this predominant pattern in the schools of this study. The organization that appears to be gaining favor is a middle school of grades six, seven, and eight and a high school of grades nine through twelve. A campus with clusterings of buildings for instructional fields is gaining in favor. In large urban centers the grouping of grades nine and ten and eleven and twelve into separate buildings for most of the work, with sharing of some special facilities, is preferred in some communities to maintain operating units not to exceed 1,500 to 2,000 pupils.

Basic secondary education is defined as everything in grades seven through twelve except special programs. This definition does not help to distinguish among the programs that are not classified as special. These programs are identified with the broad disciplines or fields of knowledge such as language arts, social sciences, physical sciences, mathematics, the arts, and physical education. Thus, the definitions of basic and special education have value primarily for operational distinctions in analyzing costs.

Needs of Youth

The period from twelve to seventeen years of age is no less unique than younger ages. To most youth these are the decisive years, growing into adulthood and making decisions on occupational careers, admission to college, and others. The fundamental needs of these youth are to extend and round out their personal and social development and to acquire a good foundation of occupational skills.

Educational Objectives

The general cultural aim of education is equal educational opportunity for every individual to develop to the fullest of his capacity and his willingness to help himself. This ideal serves as a guide in defining and achieving operational objectives.

The leaders of the participating schools expressed their objectives of the 1970s in terms of needed improvements in the system. The major ideas are: more attention to the individual, revision of the curriculum, change in the instructional strategies, change in the human qualities of the school environment, integration of cultural groups, greater involvement of students in planning, greater variety and quality in learning materials, and more functional and adequate space.

The Educational Program

The top priority of need in every district is to increase the breadth of the educational program. Suggestions cover all phases of education including fields of cognitive knowledge, skills in written and verbal communication, vocational skills, and skills in social and civic responsibility.

Much emphasis is placed on prevocational and industrial arts in the middle school for larger numbers of students. Practical and fine arts are in need of expansion.

Leaders in the Indian schools strongly emphasize the need for a more comprehensive curriculum in the middle school and the high school. The range among these schools observed in this study is about the same as among other schools. Among the thirty innovative schools described in this study three are integrated schools with over 50 percent Indians. Two others, an elementary school and a high school of all Indians, are clearly innovative in character but they are not included for lack of complete information.

Logistics: The Instructional Process

The dominant thoughts in the schools and the literature call for a reorganization of the methods of instruction. The principal recommendations are as follows:

1. Greater differentiation of staff including supervisors, head teachers, special subject teachers, teacher aides, and research specialists in testing and evaluation
2. More planning and teaching on a collaborative basis within each discipline or field of instruction
3. Greater flexibility in the instructional schedule providing for some variation in time and independent study of pupils, ranging from 15 to 25 percent of pupils' time in the middle school and 20 to 40 percent in high school
4. An open physical environment of campus design with buildings for sciences, practical arts and vocational studies, performing arts, gymnasiums, social sciences and language arts, mathematics, and other services
5. New and imaginative use of community resources to extend learning experiences

The Staff

There are suggestions that the staff could be improved by greater professional and technical skill, more competence as community leaders, more differentiation of roles, better in-service programs for continuing education, new approaches to education of beginning teachers, more use of teacher aides, and more auxiliary service staff in some districts.

Supportive Services

As the educational program becomes more flexible and instructional roles more specialized, the supportive services will become more crucial. The nonteaching academic staff for professional functions should range from 15 to 20 percent of the number of teachers, according to the opinions of leaders and writers. The range in the districts of this study is from 13 to 16 percent of the teaching staff.

The auxiliary functions of food service, building upkeep, transportation, clerical services, and others require from 44 to 63 percent of all academic staff. Some districts contract for some of these services and thus have lower percentages of employees in these categories. The total program calls for personnel ranging from 1.6 to 1.8 times the number of teachers. There is little prospect for lowering these ratios or their equivalences in contractual arrangements for services to be rendered by outside agencies.

Two propositions about future developments may modify the present structure of supportive services: (1) technological developments which may reduce attendance at school to less than five days per week for most students, with work-study programs for substantial numbers, and (2) five day per week attendance with reorganization of the school day to permit students to do all of their study at school and also for many of them to participate in work-study programs. The second proposition is most generally accepted with the possibility of expansion of supportive services in many districts.

Capital Facilities and Materials

The central trends of thought and development are for facilities that are planned in terms of the following principles: (1) utility, maximum contribution to the educational program; (2) flexibility, capability of modification for unanticipated needs; (3) aesthetics, pleasing effect on pupils, staff, and community; and (4) community centered, offering access for participation of adults.

Summer School: Extended Year

None of the twenty-eight school districts providing data on summer schools is moving toward a year-round operation. Summer schools serve a relatively few pupils for five or six weeks. No districts report a substantial increase in demand.

There is general agreement that the regular school year might be extended gradually. Another alternative is to expand the summer school with more offerings under conditions of greater appeal to students.

There is little acceptance of the proposition that schools can be operated on quarterly periods with students attending three of the four quarters on a rotating basis, thus operating the same program on a year-round basis with less capital outlay. The proposition appears too formidable for successful management and for social adaptation.

Part-Time Programs for Adults and Dropouts

These programs vary widely in scope and scale of operation. Among the twenty districts reporting data on these programs the enrollments in full-time pupil equivalents range from .01 percent to 23 percent of the regular day school enrollment. These programs depend heavily on student fees for support. Most of them are inadequately staffed.

The Continuation High School

A new type of continuation high school may emerge for dropouts and borderline performers in the regular schools. These are operated by various private agencies as well as some public school districts.

Some of these schools are experimenting with new approaches to serve a special clientele in need of personal and social reorientation and adjustment.

Prospective Innovations

There has been much innovative activity in secondary education in the past two decades. In recent years federal funds have added notable stimulation at a time of relatively favorable social and economic climate for change.

The changes have been spotty, largely experimental, and fragmentary by programs and fields of instruction such as science, mathematics, and social studies. Some districts have undertaken plans for total change for an entire school.

In this study ten elementary schools, eleven middle schools, and nine high schools have made such comprehensive changes that they are classified as highly innovative schools. They come close to representing exemplars of goals for all schools during the next decade. They will need additional resources for further development, but they are examples of what many schools can do under similar conditions.

These schools have accomplished significant changes without increasing the number of staff members more than the average in their respective districts. There are three basic changes: (1) objectives — including revisions in program, instructional processes, and staff organization; (2) commitment of staff, students, and the community; and (3) the physical environment.

All of these changes were planned in conjunction with new buildings and facilities. The principal additional costs were the investments in the physical environment. Some extra costs were involved in higher salaries of selected staff members. Changes in attitudes did not appear on the cost ledger.

The experiences of these schools suggest that the costs of self-renewal may hold the greatest potential for educational dividends during the next decade.

COST ANALYSIS OF PROGRAMS

The analysis of costs on a program basis in this study leads to the following conclusions:

1. There is general agreement that methods of analysis should be developed leading to budgeting and evaluation on a program basis.
2. The new literature on planning-programming-budgeting-systems (PPBS) in recent years is as confusing as it is helpful to educators. The reason is that the systems do not contain either the conceptual bases or the technical procedures of evaluating educational out-

comes. It is very doubtful that those who may be capable of designing program budgeting procedures have the knowledge to develop the corollaries for evaluating the educational inputs of various kinds and the consequent educational results.

Education is at a stage when knowledge from a wide range of fields within education and from relevant fields outside must be harnessed in some organized manner to develop meaningful program accounting systems. Otherwise complex accounting systems may be developed which will only serve the ends of those who may wish to discredit the school system and espouse their own causes rather than advance valid knowledge of measuring educational achievements that can be translated into costs.

3. Despite the problems inherent in program accounting systems, efforts should be focused on their development as rapidly as dependable knowledge permits.
4. In the next decade effort should be concentrated on development of an accounting system for only a few categories of programs that can be extended in detail as further knowledge is gained. The number of categories in this study is a maximum to include initially in a uniform nationwide system. Otherwise the volume of work for gathering and processing data will outrun the capacity of local districts for storing and retrieving information. Furthermore, a few categories will be more suitable for development of procedures to evaluate educational outcomes.
5. There is evidence in this study to support the proposition that school districts vary greatly in the distribution of pupil needs, particularly those needs associated with unusual learning difficulties. At the present state of knowledge, whatever the school system can do to serve the needs of every individual, the result will be a variable cost per pupil.
6. Program cost analysis is a promising approach to the measurement of fiscal needs of local school systems.

This study estimates the costs of four special programs: special education for mental and physical difficulties, social maladjustments, remedial and compensatory services, and vocational education. The needs for these programs are estimated to cost the following percentages of all operating expenses during the next decade: (1) cities — 24.1 percent; (2) suburbs — 10.0 percent; (3) nonmetropolitan

Table 23. Average Costs per Pupil in Other Programs: Ratios to Basic Programs — 1968–69

Program	*Cities*	*Suburbs*	*Independents*
1. Mentally and Physically Handicapped — Grades 1–12	2.031	1.899	2.240
2. Socially Maladjusted — Grades 1–12	2.454	1.738	None reported
3. Remedial and Compensatory — Grades 1–12	1.772	1.672	1.783
4. Vocational Education — Grades 7–12	1.695	1.530	1.605
5. Prekindergarten	1.003	0.953	1.351
6. Kindergarten	1.158	1.010	1.080

areas, excluding Indians — 11.4 percent; and (4) districts with predominant Indian population — 14.2 percent.

The mean district current expenditures per pupil in the basic programs in grades one through twelve in 1968–69 are as follows: cities — $714; suburbs — $1,065; independents — $787. Table 23 shows the average cost ratios per pupil in the other programs, using the mean costs in the basic programs indexed to 1.000.

SUMMARY OF PROJECTIONS

The educational needs in twenty-eight of the school districts of this study have been translated into minimum additional costs of the base year 1968–69. The estimates for 1980 are based on average expenditures in 1968–69.

Estimates are based on minimal current needs with a ten-year time lag for development. These are realistic goals to set for the next decade. The amounts are expressed as percents of the national current operating expenditure of $29,039,741,000 for public elementary and secondary schools in 1968–69. In other words the estimates are the absolute increases needed in 1968–69 to operate the proposed improvements. Hence, if we assume that a decade is an appropriate time for development, these percentages are relative increases indexed to the base year 1968–69. If there were no other increases due to inflation, absolute rise in standard of living, transfer of pupils from nonpublic to public schools, decline in number of dropouts, extension of the school year or summer school and adult continuing education, and additional expenditures to eliminate backlogs in capital deficiencies, these estimates would represent the percentage increase of national current expenditures over 1968–69 by the year 1980.

The estimates are as follows:

I. Early childhood education	
A. Prekindergarten (Parent Education and Nursery Schools)	11.63%
B. Kindergarten	12.53
II. Programs for mentally and physically handicapped pupils	2.30
III. Programs for socially and emotionally malajusted pupils	2.00
IV. Remedial and compensatory programs	4.91
V. Vocational-technical programs	6.00
VI. Correction for imbalance for states below the national average expenditure per pupil	9.00
VII. Transfer of pupils from nonpublic to public schools (no estimate)	—
VIII. Improvements in basic elementary and secondary education	10.00
IX. In-service education programs to counteract professional obsolescence	4.00
X. Teacher education (no estimate)	—
XI. Total minimal increase in current operating expenses	62.37
XII. Capital outlay — estimates of costs of facilities annually, excluding interest charges for financing through bonded indebtedness	16.40

Totals	*Excluding Capital Outlay*	*Including Capital Outlay*
A. Low demand enrollments for ages three and four	62.37%	78.57%
B. Medium demand enrollments for ages three and four	68.05	84.47
C. High demand enrollments for ages three and four	72.19	88.59

The totals of these estimates range from 62.37 percent to 72.19 percent of the total current operating expenses in 1968–69. This range is based on three propositions for development of early childhood programs for children of ages three and four. There are other factors, as mentioned, which are not estimated.

A growth rate in the nation's economy of 3 percent each year over the preceding year for inflation and rise in standard of living would be expected to require a comparable increase in the expenditures for education. Such a growth rate would increase educational expenditures of 1968–69 by at least 40 percent in 1980. Moreover, such a growth would be expected to apply to the relative percentage estimates of this study since they are based on prices in 1968–69.

Thus, the overall minimum current operating expenditures for the public schools, assuming no transfer from the nonpublic schools, would be about 2.27 times the amount in 1968–69, or an increase of 127 percent.

A general estimate for capital outlay expense is presented to emphasize the relative magnitude of this important component of educational costs. Too often capital costs are treated separately from operating costs, with the result that the symbiotic relationship between the two is seldom put into proper perspective.

Among the most innovative schools in this study, cost data are available on twelve plants that were constructed within the last five years. These plants were designed for programs that exemplify realistic goals for 1980. The average initial cost for buildings, grounds, and basic equipment was $4,000 per pupil at 1968–69 prices. At an estimated overall depreciation rate of 35 years, the annual cost is $140 per pupil. This amounts to 16.4 percent of the average expenditure per pupil for current expenses in 1968–69.

This percentage figure may be close to the average cost of replacement of capital facilities, excluding interest payments on capital bonded debt. In 1968–69 the nation spent $4.461 billion on capital outlay, much of which was for 1960 rather than 1980 schools. This is 15.4 percent of current expenditures in that year. In addition $1.104 billion was spent on interest payments on capital bonded debt. This amounts to 3.8 percent of the current expenditure. Thus, at 1968–69 prices and interest rates an amount equal to about 20 percent of current expenditures is the approximate size of costs for capital replacements and debt service.

This rate of annual expenditure will not eliminate the large backlog of antiquated facilities which are the single greatest impediment to educational change in this country. It is safe to say that at least twice this rate of expenditure (or 40 percent of current expenditures) is needed for ten years to bring the capital facilities of the public school system up to reasonable utility for the programs that will be needed in 1980.

NEEDS EXTERNAL TO THE PUBLIC SCHOOL SYSTEM

Everywhere there is great concern for more employment opportunities for graduates, and for those who may continue formal schooling beyond high school.

Leaders in the great cities want enough business and industry to employ the high potential of semiskilled and skilled workers. In the suburbs there is similar concern for a small proportion of the school population. The nonmetropolitan communities have a need which appears to be somewhere between the suburbs and the great cities.

A very special need is found on the Indian reservations and isolated communities bordering on them. These latter communities have served as doors to an integrated society, though offering far too few employment opportunities for Indians.

All educational leaders place great emphasis on the need of employment opportunities for work-study programs for youth in school, for programs to retrain adults who become dislocated because of technological changes, and for high school graduates. Obviously schools and employment opportunities are not matched. Thus, the school has to help many of its students to build vicarious acquaintance with the world of work through guidance and counseling, and to acquire skills which ultimately give them mobility for employment elsewhere.

There is great concern among members of school systems about relationships between the schools and other institutions. None has a higher priority than the home, with unlimited potential for involvement of parents as educational participants.

APPENDIX A

School Population Estimates

Table 1. SCHOOL POPULATION ESTIMATES: UNDER FIVE YEARS (POPULATION IN THOUSANDS)

State	*1970*		*1980*	
	Series I-D Under 5 Years	*Series I-B Under 5 Years*	*Series I-D Under 5 Years*	*Series I-B Under 5 Years*
Alabama	326	372	367	500
Alaska	34	39	40	55
Arizona	180	204	231	311
Arkansas	183	208	200	272
California	1,810	2,052	2,409	3,237
Colorado	188	213	228	305
Connecticut	251	284	311	418
Delaware	51	58	62	84
District of Columbia	81	93	93	129
Florida	546	622	734	994
Georgia	439	500	496	676
Hawaii	72	83	76	104
Idaho	62	71	72	97
Illinois	938	1,066	1,099	1,483
Indiana	439	499	502	674
Iowa	226	257	242	324
Kansas	191	217	216	290
Kentucky	282	320	301	404
Louisiana	371	424	429	587
Maine	86	98	91	122
Maryland	348	396	431	583
Massachusetts	451	511	512	685
Michigan	756	858	872	1,174
Minnesota	327	371	377	505
Mississippi	236	270	258	354
Missouri	378	430	430	580

Source: U. S. Bureau of the Census, *Current Population Reports*, Series P-25, No. 375, "Revised Projections of the Population of States: 1970 to 1985." Washington, D.C.: U.S. Government Printing Office, October 3, 1967. Table 5, series I-D, pp. 42–49; series I-B, pp. 26–33.

Table 1 CONT. SCHOOL POPULATION ESTIMATES: UNDER 5 YEARS (POPULATION IN THOUSANDS)

State	1970		1980	
	Series I-D Under 5 Years	*Series I-B Under 5 Years*	*Series I-D Under 5 Years*	*Series I-B Under 5 Years*
Montana	65	74	73	99
Nebraska	129	147	140	188
Nevada	53	60	65	87
New Hampshire	62	70	74	100
New Jersey	595	676	742	999
New Mexico	118	134	144	193
New York	1,515	1,719	1,757	2,366
North Carolina	463	528	514	701
North Dakota	60	68	64	85
Ohio	901	1,023	1,066	1,436
Oklahoma	206	234	226	305
Oregon	161	183	194	260
Pennsylvania	893	1,015	975	1,314
Rhode Island	74	83	81	110
South Carolina	254	290	277	380
South Dakota	63	71	66	89
Tennessee	342	390	386	522
Texas	1,056	1,200	1,239	1,671
Utah	111	125	133	178
Vermont	36	41	40	53
Virginia	425	484	502	681
Washington	252	286	300	402
West Virginia	137	155	133	180
Wisconsin	375	425	430	577
Wyoming	30	34	35	46
*United States**	17,625	20,027	20,736	27,972

* National totals are from the census projections. State totals are computed in this study, using the proportions of ages five to seventeen.

Table 2. SCHOOL POPULATION ESTIMATES: FIVE TO SEVENTEEN YEARS (POPULATION IN THOUSANDS)

	1970	*1980*	
State	*Series I-D and I-B 5 to 17 Years*	*Series I-D 5 to 17 Years*	*Series I-B 5 to 17 Years*
Alabama	988	876	1,035
Alaska	89	86	102
Arizona	512	545	639
Arkansas	536	489	576
California	5,277	5,565	6,506
Colorado	561	534	625
Connecticut	775	731	855
Delaware	151	145	170
District of Columbia	195	199	236
Florida	1,624	1,740	2,042
Georgia	1,266	1,173	1,383
Hawaii	210	187	221
Idaho	199	174	203
Illinois	2,848	2,561	3,002
Indiana	1,336	1,172	1,374
Iowa	708	580	678
Kansas	582	490	574
Kentucky	853	734	860
Louisiana	1,085	1,001	1,183
Maine	257	223	260
Maryland	1,031	991	1,165
Massachusetts	1,365	1,221	1,423
Michigan	2,371	2,024	2,374
Minnesota	1,005	878	1,027
Mississippi	688	608	721
Missouri	1,154	1,013	1,189

Source: U. S. Bureau of the Census, Current Population Reports, Series P-25, No. 375, "Revised Projections of the Population of States: 1970 to 1985." Washington, D.C.: U.S. Government Printing Office, October 3, 1967. Table 5, series I-B, pp. 26–33; series I-D, pp. 42–49.

Table 2 Cont. School Population Estimates: Five to Seventeen Years (Population in Thousands)

State	*1970*	*1980*	
	Series I-D and I-B 5 to 17 Years	*Series I-D 5 to 17 Years*	*Series I-B 5 to 17 Years*
Montana	200	173	202
Nebraska	383	325	380
Nevada	142	144	169
New Hampshire	183	176	205
New Jersey	1,832	1,746	2,045
New Mexico	331	325	382
New York	4,565	4,173	4,868
North Carolina	1,359	1,229	1,448
North Dakota	182	148	174
Ohio	2,808	2,456	2,881
Oklahoma	621	548	642
Oregon	512	459	537
Pennsylvania	2,878	2,381	2,786
Rhode Island	219	193	225
South Carolina	737	657	776
South Dakota	189	156	183
Tennessee	1,026	914	1,076
Texas	3,059	2,851	3,346
Utah	321	302	354
Vermont	108	96	112
Virginia	1,225	1,155	1,359
Washington	786	712	831
West Virginia	446	341	398
Wisconsin	1,155	1,016	1,189
Wyoming	91	80	94
*United States**	53,026	48,694	57,084

* United States column totals do not match cumulative state totals due to projection technique.

APPENDIX B

NATIONAL EDUCATIONAL FINANCE PROJECT

Special Study No. 1

EARLY CHILDHOOD AND BASIC
ELEMENTARY AND SECONDARY EDUCATION

Data Form I

DISTRIBUTION OF PUPILS, STAFF,
AND CURRENT OPERATING EXPENDITURES
BY PROGRAMS IN REGULAR SCHOOL YEAR:
SCHOOL YEAR 1968–69

School District ______________________________
Superintendent ______________________________
Address ______________________________
____

Section I

Pupil Enrollment (Average Daily Membership — ADM) in Day School Programs (Exclude Part-Time and Evening Programs)	Grade or Program Level					
	Kindergarten, Nursery, Other Pre-First Grade	Elementary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
1. Number of days in regular school year (Exclude summer school)	______	______	______	______	______	______
2. Length of average full-day program in hours and minutes	______	______	______	______	______	______
3. Gross total enrollment (head count) of pupils in ADM	______	______	______	______	______	______
4. Total number of full-time equivalent (FTE = full-day) pupils in ADM	______	______	______	______	______	______
5. Estimated number of qualified persons not in respective programs	______	______	______	______	______	______
6. Special programs:						
A. Prekindergarten						
(1) Total enrollment (head count) in ADM	______	. . .	. . .	. . .	. . .	______
(2) Total FTE pupils in ADM	______	. . .	. . .	. . .	. . .	______
(3) Estimated number qualified children not in prekindergarten	______	. . .	. . .	. . .	. . .	______
B. Kindergarten						
(1) Total enrollment (head count) in ADM	______	. . .	. . .	. . .	. . .	______
(2) Total FTE pupils in ADM	______	. . .	. . .	. . .	. . .	______
(3) Estimated number qualified children not in kindergarten	______	. . .	. . .	. . .	. . .	______

C. Special classes for the mentally and physically handicapped						
(1) Total enrollment (head count) in ADM...						
(2) Total FTE pupils in ADM..............						
(3) Estimated number of qualified persons not in these classes.........................						
D. Programs for the socially maladjusted						
(1) Resident-institutional (detention) schools						
a. Total enrollment (head count) in ADM						
b. Total FTE pupils in ADM............						
c. Estimated number of qualified persons not in these programs................						
(2) Programs of special classes, intensive therapy and counseling						
a. Total enrollment (head count) in ADM						
b. Total FTE pupils in ADM............						
c. Estimated number of qualified persons not in these programs................						
E. Remedial and compensatory programs for other learning and developmental difficulties (including hospital and home bound)						
(1) Total enrollment (head count) in ADM...						
(2) Total FTE pupils in ADM..............						
(3) Estimated number qualified persons not in these programs						
F. Vocational-technical education classes qualifying for federal reimbursement						
(1) Total enrollment (head count) in ADM...	. . . .	. . . .				

Section I

Pupil Enrollment (Average Daily Membership — ADM) in Day School Programs (Exclude Part-Time and Evening Programs)	Grade or Program Level					
	Kinder-garten, Nursery, Other Pre-First Grade	Elemen-tary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
(2) Total FTE pupils in ADM..............	. . .	. . .	____	____	____	____
(3) Estimated number of qualified persons not in these classes........................	. . .	. . .	____	____	____	____
G. Total enrollments of pupils in day school special programs in item 6:						
(1) Total head count in ADM: Sum of A(1), B(1), C(1), D(1)a, D(2)a, E(1), F(1)...	____	____	____	____	____	____
(2) Total FTE pupils in ADM: Sum of A(2), B(2), C(2), D(1)b, D(2)b, E(2), F(2)...	____	____	____	____	____	____
(3) Total estimated number qualified persons not in special programs: Sum of A(3), (B)3, C(3), D(1)c, D(2)c, E(3), F(3)...	____	____	____	____	____	____
7. Total net enrollment of pupils in basic day school programs						
A. Total enrollment head count in ADM: Item 3 minus item 6G(1).........................	____	____	____	____	____	____
B. Total number FTE pupils in ADM: Item 4 minus item 6G(2).........................	____	____	____	____	____	____
C. Estimated number of qualified persons not in basic programs: Item 5 minus item 6G(3)....	____	____	____	____	____	____

Section II

Academic Staff (Certificated) Employed and on the Job: Express as Full-Time Equivalents (FTE) to Nearest 0.1 of Full Work Load	Grade or Program Level					
	Kinder-garten, Nursery, Other Pre-First Grade	Elementary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
8. Total number classroom teachers (FTE) in all-day school programs serving pupils in item 3 of section I	___	___	___	___	___	___
9. Total number of classroom teachers (FTE) in special programs serving pupils in item 6 of section I						
A. Prekindergarten pupils in 6(A)	___	. . .	. . .	. . .	. . .	___
B. Kindergarten pupils in 6(B)	___	. . .	. . .	. . .	. . .	___
C. Programs for handicapped pupils in 6(C)	___	___	___	___	___	___
D. Programs for socially maladjusted pupils in 6(D)	___	___	___	___	___	___
E. Remedial and compensatory programs in 6(E)	___	___	___	___	___	___
F. Voc-tech education programs in 6(F)	. . .	. . .	___	___	___	___
G. Total number of classroom teachers (FTE) serving pupils in special programs in item 6G(1) . . .	___	___	___	___	___	___

Section II

Academic Staff (Certificated) Employed and on the Job: Express as Full-Time Equivalents (FTE) to Nearest 0.1 of Full Work Load	Grade or Program Level					
	Kindergarten, Nursery, Other Pre-First Grade	Elementary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
10. Net total classroom teachers (FTE) in basic programs. Item 8 minus item 9G	___	___	___	___	___	___
11. Total Non-Teaching academic (certificated) staff in FTE serving pupils in item 3 of section I (express FTE to nearest 0.1 of full work load), plus teacher aides.						
Total of following six categories:	___	___	___	___	___	___
A. Administrative and Supervisory Staff: Superintendent, Assistant Superintendent, Principals, Supervisors	___	___	___	___	___	___
B. Counselors	___	___	___	___	___	___
C. Psychologists and social workers	___	___	___	___	___	___
D. Librarians	___	___	___	___	___	___
E. Research and curriculum workers	___	___	___	___	___	___
F. Teacher aides	___	___	___	___	___	___

12. Grand total academic (certificated) staff and teacher aides in FTE (item 8 plus item 11)....	______	______	______	______	______	______
13. Allocation of nonteaching academic staff and teacher aide time (FTE) among special programs: Example for Program #(5)...	1.0a 2.5c ______	1.5a 2.5b 4.5c ______	1.0a 2.0b 3.5c ______	______	______	______

Staff

a. Administrators — supervisors
b. Counselors
c. Psychologists and Social Workers
d. Librarians
e. Research and Curriculum
f. Teacher Aides

Program						
(1) Prekindergarten......	______	. . .	. . .	. . .	. . .	______
(2) Kindergarten........	______	. . .	. . .	. . .	. . .	______
(3) Handicapped........	______	______	______	______	______	______
(4) Socially Maladjusted..	______	______	______	______	______	______
(5) Remedial and Compensatory........	______	______	______	______	______	______
(6) Voc-Tech...........	. . .	. . .	______	______	______	______

14. Total classroom teachers (FTE) in item 8 employed during summer (or on twelve-month basis) for planning, curriculum work, and so on, in connection with the regular school year but *not* for operation of summer school. Use number of days of regular school year to compute FTE's..........	______	______	______	______	______	______
15. Total nonteaching academic staff (FTE) employed during summer similar to teachers in item 14 (for example, superintendent, other central office staff, and so on)..................................	______	______	______	______	______	______

Section III

Nonacademic Staff (FTE) Employed and on the Job. Express FTE to Nearest 0.1 of Full Work Load	Grade or Program Level					
	Kindergarten, Nursery, Other Pre-First Grade	Elementary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
16. Number (FTE) employees for health service: doctors, nurses, and others	______	______	______	______	______	______
17. Number (FTE) clerks, secretaries, statisticians	______	______	______	______	______	______
18. Security officers	______	______	______	______	______	______
19. Number (FTE) employees for operation and maintenance of school plants	______	______	______	______	______	______
20. Number (FTE) employees for food service	______	______	______	______	______	______
21. Number (FTE) employees for transportation of pupils	______	______	______	______	______	______
22. Total number (FTE) nonacademic staff	______	______	______	______	______	______
23. Total number of nonacademic staff (FTE) employed during summer for year-round functions but *not* for operation of summer school. (Use number of days in regular school year as basis for computing FTE's.)						
A. Health service						______
B. Clerical, secretarial, statistical services						______
C. Operation and maintenance of school plants						______
D. Transportation (repair and maintenance of equipment)						______
E. Other						______
F. Total						______

Section IV

Distribution of Current Operating Expenditures (Excluding Capital Outlay and Debt Service for Capital Outlay). For the Regular School Year Shown in Item 1, Section I	Grade or Program Level					
	Kindergarten, Nursery, Other Pre-First Grade	Elementary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
24. Total salaries paid to classroom teachers (individuals) shown in item 8 of section II for regular school year..................................	$______	$______	$______	$______	$______	$______
25. Total salaries paid to teachers shown in item 14 of section II for extended-year work................	______	______	______	______	______	______
26. Total salaries paid to nonteaching academic staff shown in item 11 of section II for regular school year..	______	______	______	______	______	______
27. Teacher aides	______	______	______	______	______	______
28. Total salaries paid to nonteaching academic staff (FTE) shown in item 15 of section II for extended year work..................................	______	______	______	______	______	______
29. Total salary payments to persons on leave of absence and to substitutes for daily absences of staff (for persons not counted in items 8 and 11 of section II)	______	______	______	______	______	______
30. Total salary payments to academic (certificated) staff and substitutes: Sum of items 24, 25, 26, 27, 28, 29	______	______	______	______	______	______
31. Total payments for social security and retirement. (Exclude contributions of employees)............	______	______	______	______	______	______

Section IV

Distribution of Current Operating Expenditures (Excluding Capital Outlay and Debt Service for Capital Outlay). For the Regular School Year Shown in Item 1, Section I	Grade or Program Level					
	Kindergarten, Nursery, Other Pre-First Grade	Elementary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
32. Grand total payments for salaries of academic staff, substitutes, and retirement benefits. (Including persons employed for regular school year. Sum of items 30, 31.)	___	___	___	___	___	___
33. Current operating expenses in addition to salary payments shown in item 32. (Show allocations by the following categories if program budgeting permits; otherwise show estimates where possible.)						
A. Administration and general control						
(1) Central office	$___	$___	$___	$___	$___	$___
C*	___	___	___	___	___	___
(2) Security officers	___	___	___	___	___	___
B. Salary payments to clerks, stenographers, and other nonacademic aides for instruction, excluding teacher aides. (See 27 for teacher aides.)	___	___	___	___	___	___
C*	___	___	___	___	___	___
C. Instructional supplies and equipment. (Exclude major capital equipment)	___	___	___	___	___	___
C*	___	___	___	___	___	___

D. Operation and maintenance of plant. (Include salaries of personnel, materials, and supplies; exclude major replacements and renovations) . .						
C*						
E. Transportation. (Include salaries of personnel, operation of equipment, and depreciation on district-owned equipment)	$	$	$	$	$	$
C*						
F. Other auxiliary services. (Include salaries and other expenses)						
C*						
G. Fixed charges: insurance, debt service for cash flow, utilities, and so on......................						
H. Community services: recreation programs, driver training, and so on..........................						
I. Total payments for social security and retirement of nonacademic staff. (Exclude contributions of employees).........................						
J. Total current operating expenses other than salary payments in item 32, section IV........						
34. Grand Total Current Operating Expenses. Item 32 plus item 33J. Summer School expenditures are shown in data form II.......................						

* Expenses for contractual services by outside agencies such as computerized accounting, transportation, and so on.

APPENDIX C

NATIONAL EDUCATIONAL FINANCE PROJECT

Special Study No. 1

EARLY CHILDHOOD EDUCATION AND BASIC
ELEMENTARY AND SECONDARY EDUCATION

Data Form II

SUMMER SCHOOL (EXTENDED YEAR) PROGRAMS:
SUMMER 1968

School District ______________________________
Superintendent ______________________________
Address ______________________________
____

Section I

Pupil Enrollments (ADM) in Summer Programs	Grade or Program Level					
	Kindergarten, Nursery, Other Pre-First Grade	Elementary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
1. Number days in summer programs	______	______	______	______	______	
2. Length of average full-day program: hours and minutes	______	______	______	______	______	
3. Gross total enrollment (head count) of pupils in ADM	______	______	______	______	______	______
4. Total number full-time equivalent (FTE = full-day) pupils in ADM	______	______	______	______	______	______
5. Estimated number of qualified persons in need of respective programs	______	______	______	______	______	______
6. Special programs:						
A. Prekindergarten:						
(1) Total enrollment (head count) in ADM	______	. . .	. . .	. . .	. . .	______
(2) Total FTE pupils in ADM	______	. . .	. . .	. . .	. . .	______
(3) Estimated number of qualified persons not in programs	______	. . .	. . .	. . .	. . .	______
B. Kindergarten:						
(1) Total enrollment (head count) in ADM	______	. . .	. . .	. . .	. . .	______
(2) Total FTE pupils in ADM	______	. . .	. . .	. . .	. . .	______
(3) Estimated number of qualified persons not in programs	______	. . .	. . .	. . .	. . .	______

C. Special classes for mentally and physically handicapped:						
(1) Total enrollment (head count) in ADM...						
(2) Total FTE pupils in ADM..............						
(3) Estimated number qualified persons not in programs						
D. Programs for socially maladjusted:						
(1) Total enrollment (head count) in ADM...						
(2) Total FTE pupils in ADM..............						
(3) Estimated number qualified persons not in programs						
E. Remedial and compensatory programs for other learning and developmental difficulties (for repeaters and others receiving extra instruction).						
(1) Total enrollment (head count) in ADM...						
(2) Total FTE pupils in ADM..............						
(3) Estimated number qualified persons not in programs						
F. Vocational-technical education classes qualifying for federal reimbursement:						
(1) Total enrollment (head count) in ADM...	. . . .	. . . .				
(2) Total FTE pupils in ADM..............	. . . .	. . . .				
(3) Estimated number qualified persons not in these classes	. . . .	. . . .				

Section I

Pupil Enrollments (ADM) in Summer Programs	Grade or Program Level					
	Kinder-garten, Nursery, Other Pre-First Grade	Elemen-tary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
G. Total enrollments of pupils in summer special programs:						
(1) Total head count in ADM: Sum of A(1), B(1), C(1), D(1), E(1), F(1)	______	______	______	______	______	______
(2) Total FTE pupils in ADM: Sum of A(2), B(2), C(2), D(2), E(2), F(2)	______	______	______	______	______	______
(3) Total estimated number of qualified persons not in special programs: Sum of A(3), B(3), C(3), D(3), E(3), F(3)	______	______	______	______	______	______
7. Total net enrollment of pupils in basic summer school programs:						
A. Total enrollment (head count) in ADM: Item 3 minus item 6G(1)	______	______	______	______	______	______
B. Total number FTE pupils in ADM: Item 4 minus item 6G(2)	______	______	______	______	______	______
C. Estimated number of qualified persons not in basic summer programs: Item 5 minus item 6G(3)	______	______	______	______	______	______

Section II

Academic Staff (Certificated) Employed: Express as FTE to Nearest 0.1 of Full Work Load	Grade or Program Level					
	Kinder-garten, Nursery, Other Pre-First Grade	Elemen-tary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
8. Total number classroom teachers (FTE)	______	______	______	______	______	______
9. Total number classroom teachers (FTE) in special summer programs:						
A. Prekindergarten	______	. . .	. . .	. . .	. . .	______
B. Kindergarten	______	. . .	. . .	. . .	. . .	______
C. Programs for mentally and physically handicapped	______	______	______	______	______	______
D. Socially maladjusted	______	______	______	______	______	______
E. Remedial and compensatory programs	______	______	______	______	______	______
F. Vo-tech programs	. . .	. . .	______	______	______	______
G. Total number classroom teachers (FTE) in Special Summer Programs: Sum of 9A through 9F	______	______	______	______	______	______
10. Net total classroom teachers (FTE) in basic summer programs: Item 8 minus item 9G	______	______	______	______	______	______
11. Total nonteaching academic staff (certificated) in FTE serving pupils in summer programs	______	______	______	______	______	______
12. Grand total academic staff (FTE) in summer programs: Item 8 plus item 11	______	______	______	______	______	______

Section III

Nonacademic Staff (FTE) Employed in Summer Programs (Exclude Staff Shown in Data Form I Employed in Summer for Year-Round Functions)	Grade or Program Level					
	Kindergarten, Nursery, Other Pre-First Grade	Elementary Grades 1 to ___	Middle or Junior High Grades ___ to ___	High School Grades ___ to ___	Unassigned to Grade Level	Total
13. Number FTE employees for health service: doctors, nurses, others	______	______	______	______	______	______
14. Number FTE clerks, secretaries, statisticians, noncertificated teacher aides	______	______	______	______	______	______
15. Number FTE employees for operation and maintenance of plants	______	______	______	______	______	______
16. Number FTE employees for food service	______	______	______	______	______	______
17. Number FTE employees for transportation of pupils	______	______	______	______	______	______
18. Total number (FTE) nonacademic staff for operation of summer programs. (Do not include staff counted in data form I employed in summer for year-round functions associated with the regular school year.)	______	______	______	______	______	______

Section IV

Current Operating Expenditures in Summer Programs	Grade or Program Level					
	Kinder-garten, Nursery, Other Pre-First Grade	Elemen-tary Grades 1 to __	Middle or Junior High Grades __ to __	High School Grades __ to __	Unassigned to Grade Level	Total
19. Total salaries of teachers in item 8.............	$______	$______	$______	$______	$______	$______
20. Total salaries for nonteaching academic staff in item 11....................................	______	______	______	______	______	______
21. Total salaries of nonacademic staff in item 18....	______	______	______	______	______	______
22. All other current operating expenditures for summer programs	______	______	______	______	______	______
23. Total current operating expenditures for summer programs: Sum of items 19, 20, 21, and 22......	______	______	______	______	______	______

APPENDIX D

NATIONAL EDUCATIONAL FINANCE PROJECT

Special Study No. 1

EARLY CHILDHOOD EDUCATION AND BASIC
ELEMENTARY AND SECONDARY EDUCATION

Data Form III

PART-TIME PROGRAMS FOR ADULTS
AND SCHOOL DROPOUTS:
SCHOOL YEAR 1968–69

School District ____

Superintendent ____

Address ____

____

Items Only for Part-Time Programs for Adults and School Dropouts	Elementary	Secondary	Post-Secondary	Total
1. School year: number of days				
2. Total enrollment (head count) in ADM				
3. Total number FTE pupils. (Use average full-day course credit load as basis for FTE)				
4. Total number FTE pupils in item 3 in vocational-technical classes qualifying for federal reimbursement				
5. Net total number FTE pupils in item 3 in basic education classes: (Item 3 minus item 4)				
6. Total number classroom teachers (FTE)				
A. Total number classroom teachers (FTE) in vocational-technical education classes				
B. Total number classroom teachers (FTE) in basic education classes: Total minus 6A				
7. Total number nonteaching academic staff (FTE) (administrators, supervisors, counselors, and so on)				
8. Total nonacademic staff (FTE) (Secretarial, clerical, custodial, other)				
9. Current operating expenditures:				
A. Total salaries for teachers shown in item 6	$	$	$	$
B. Total salaries for nonteaching academic staff in item 7				
C. Total salaries for nonacademic staff shown in item 8				
D. All other current operating expenditures				
10. Total current operating expenditures. (Sum of 9A, 9B, 9C, 9D)				